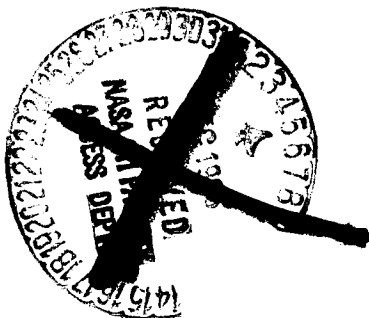


1983 DIRECT STRIKE LIGHTNING DATA



Mitchel E. Thomas

Date for general release August 31, 1988

August 1985

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LIGHTNING DATA, PART 3 (NASA) 450 p
CSCI 04B

N88-29261

Unclass

H1/47 0164883



National Aeronautics and
Space Administration

Langley Research Center
Hampton, Virginia 23665

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* Part 1 and Part 2 published under separate cover.

ORIGINAL PAGE IS
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F106 LIGHTNING/TK 8/M. THOMAS
S-013

TEST NO. 83-036

RUN NO. 23

D DOT FWD A/m^2

329.7 329.9 330.1 330.3 330.5 330.7 330.9 331.1
MICROSECONDS

20:06:28.0779

881

TEST NO. 83-036

F106 LIGHTNING/TK 10/M. THOMAS

S-013

RUN NO. 23

B DOT 1

1/S

1200
800
400
0
-400
-800
-1200

330.0

330.2

330.4

330.6

330.8

331.0

331.2

331.4

MICROSECONDS

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882

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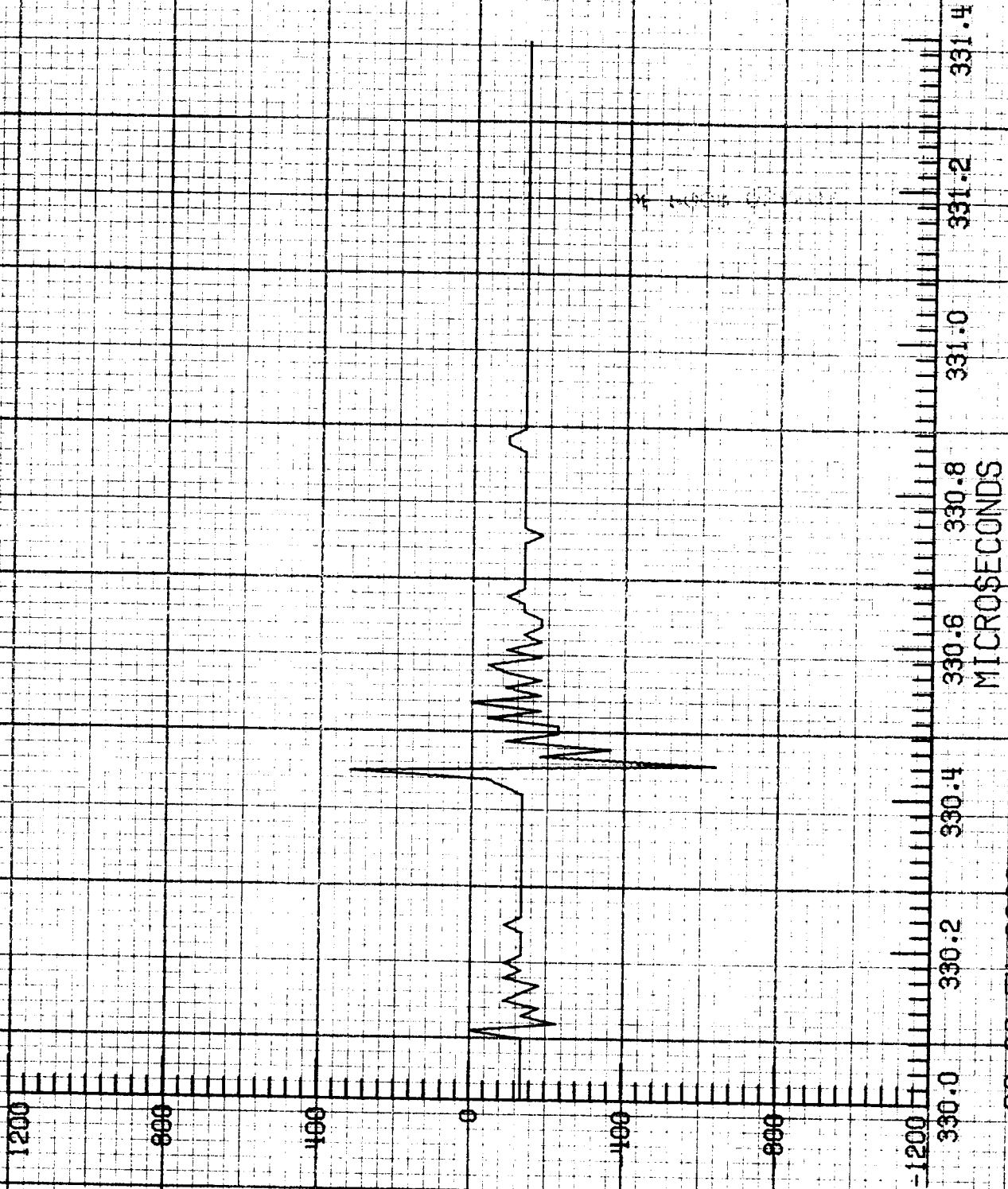
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N-015

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TEST NO. 83-036



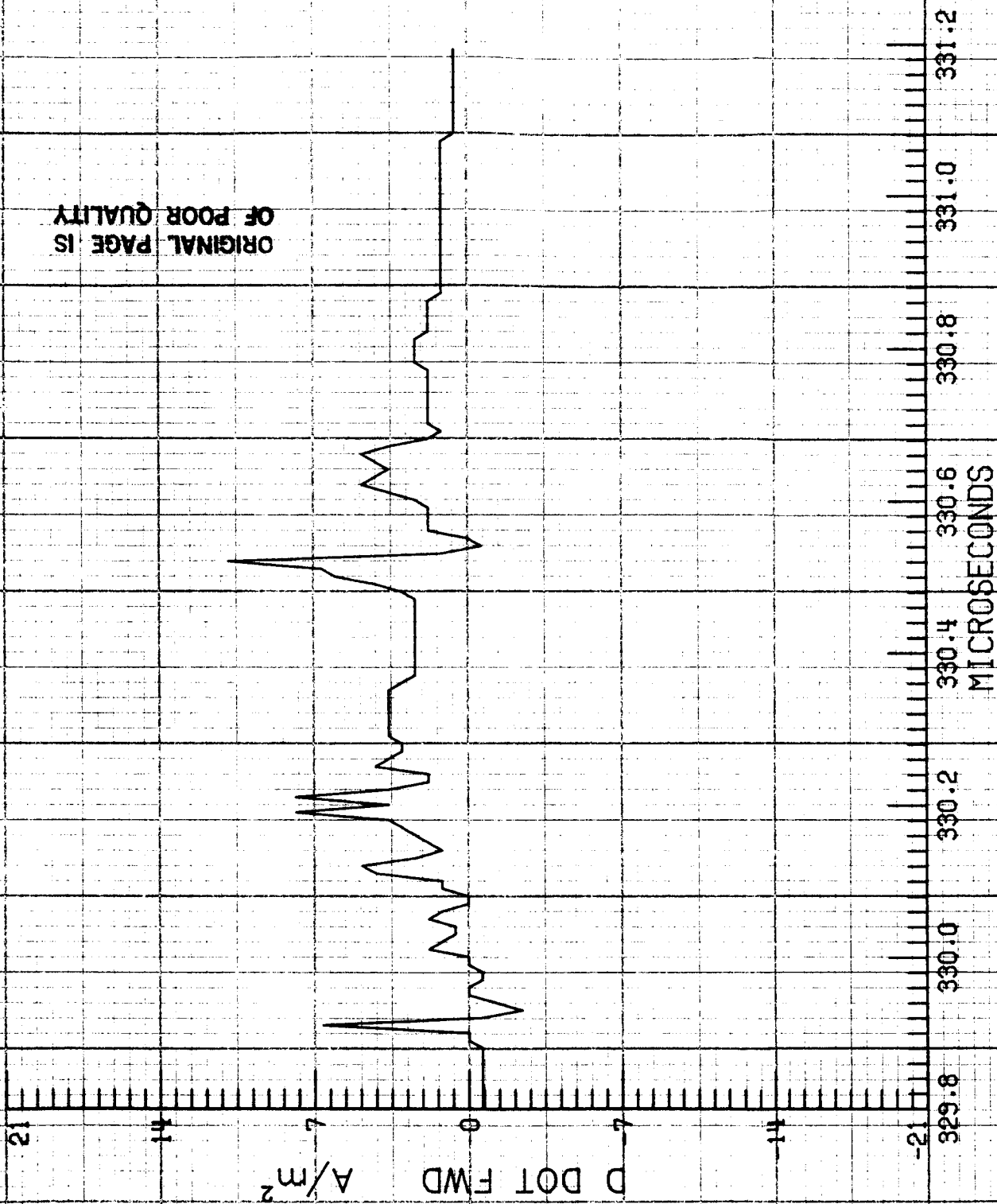
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TEST NO. 83-036

F106 LIGHTNING/TK 8/M.THOMAS

N-016

RUN NO. 25



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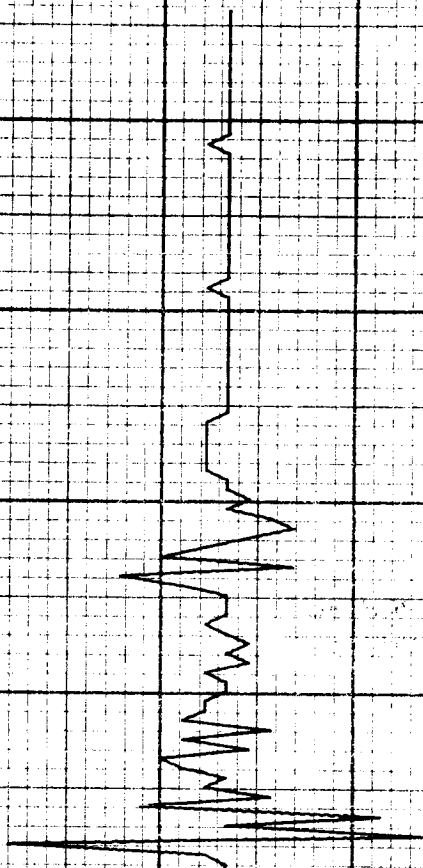
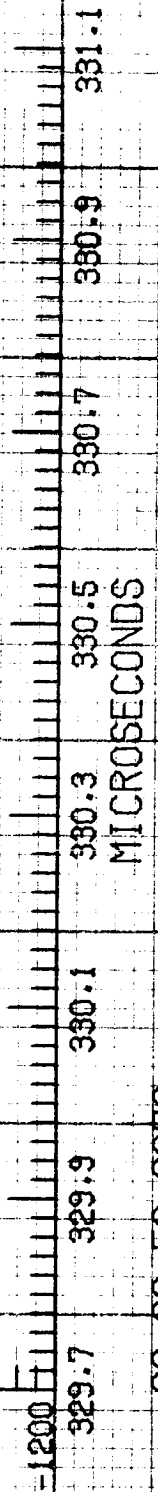
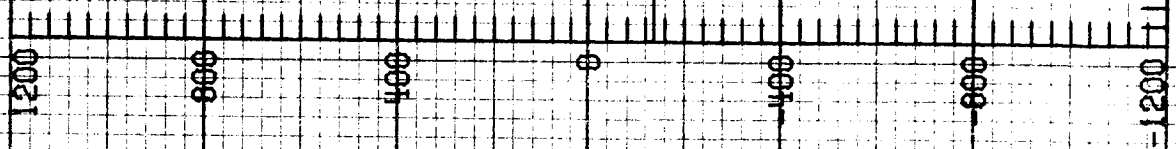
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N-017

B DOT L
T/S



885

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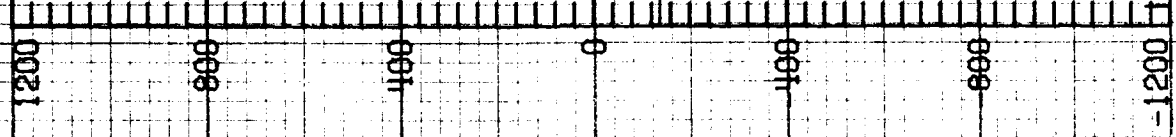
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106 LIGHTNING/TK 10/M. THOMAS

RUN NO. 27

N-018

B DOT 1 1/6



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988

20:07:24.2634

ORIGINAL PAGE IS
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F106 LIGHTNING/TK 10/M. THOMAS

S-015

B DOT L T/S

TEST NO. 83-036

1200
000
000
0
-400
-800
-1200

329.9 330.1 330.3 330.5 330.7 330.9 331.1 331.3
MICROSECONDS

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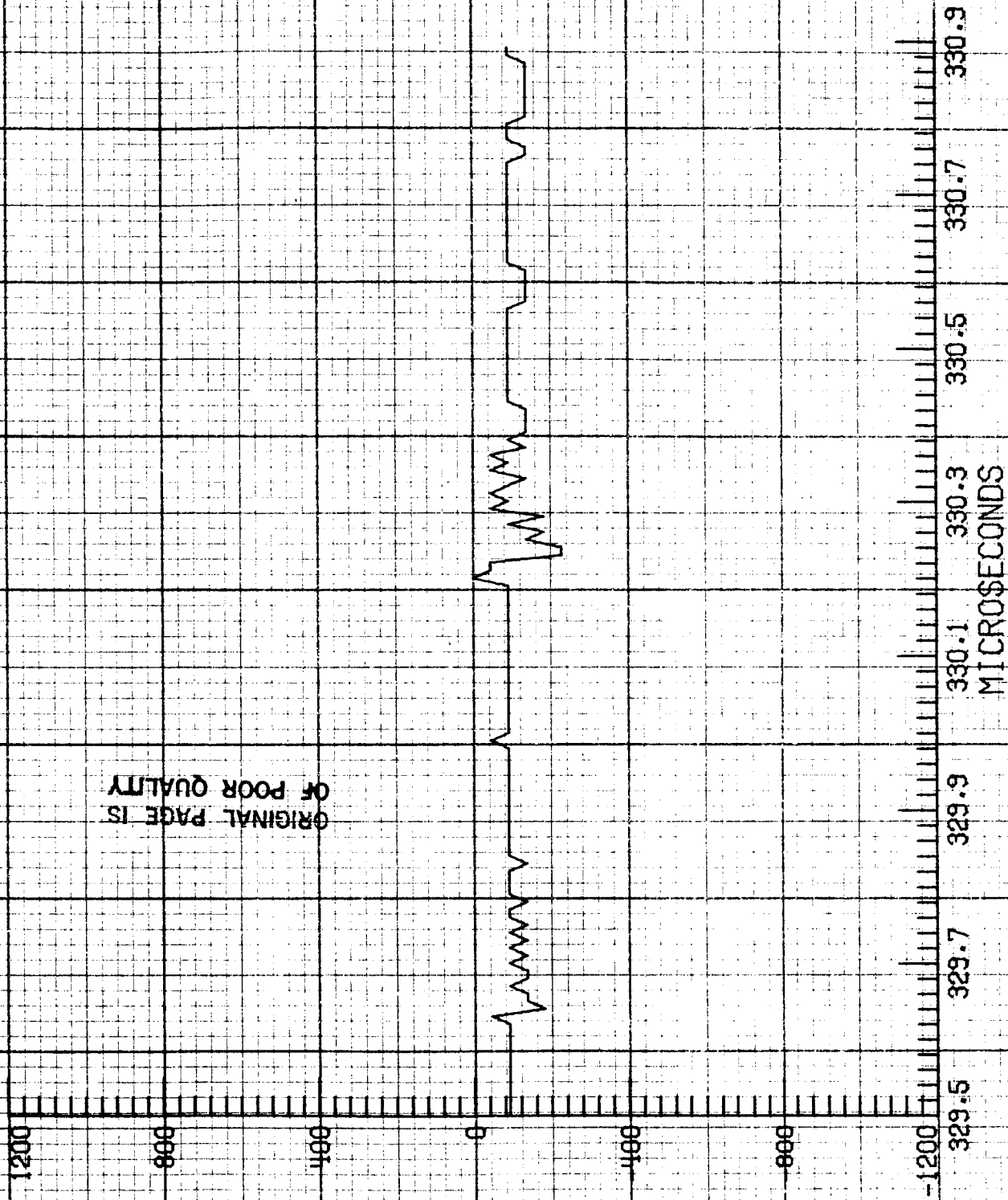
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RUN NO. 29

N-019

B DOT L T/S

ORIGINAL PAGE IS
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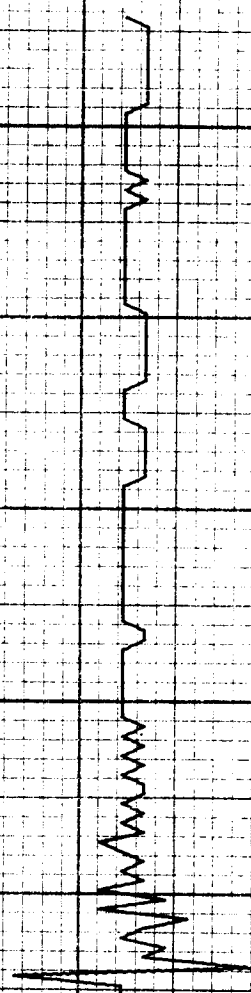
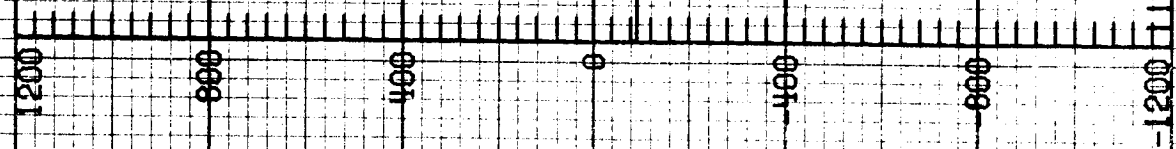
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TEST NO. 83-036

F106 LIGHTNING/TK 10/M. THOMAS
N-020

RUN NO. 30

B DOT 1
1/S



688

329.9 330.1 330.3 330.5 330.7 330.9 331.1 331.3

MICROSECONDS

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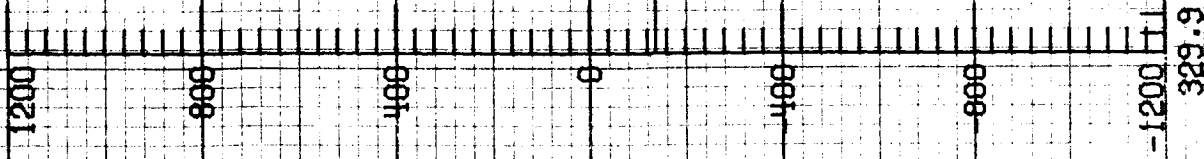
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S-016

B DOT L T/S

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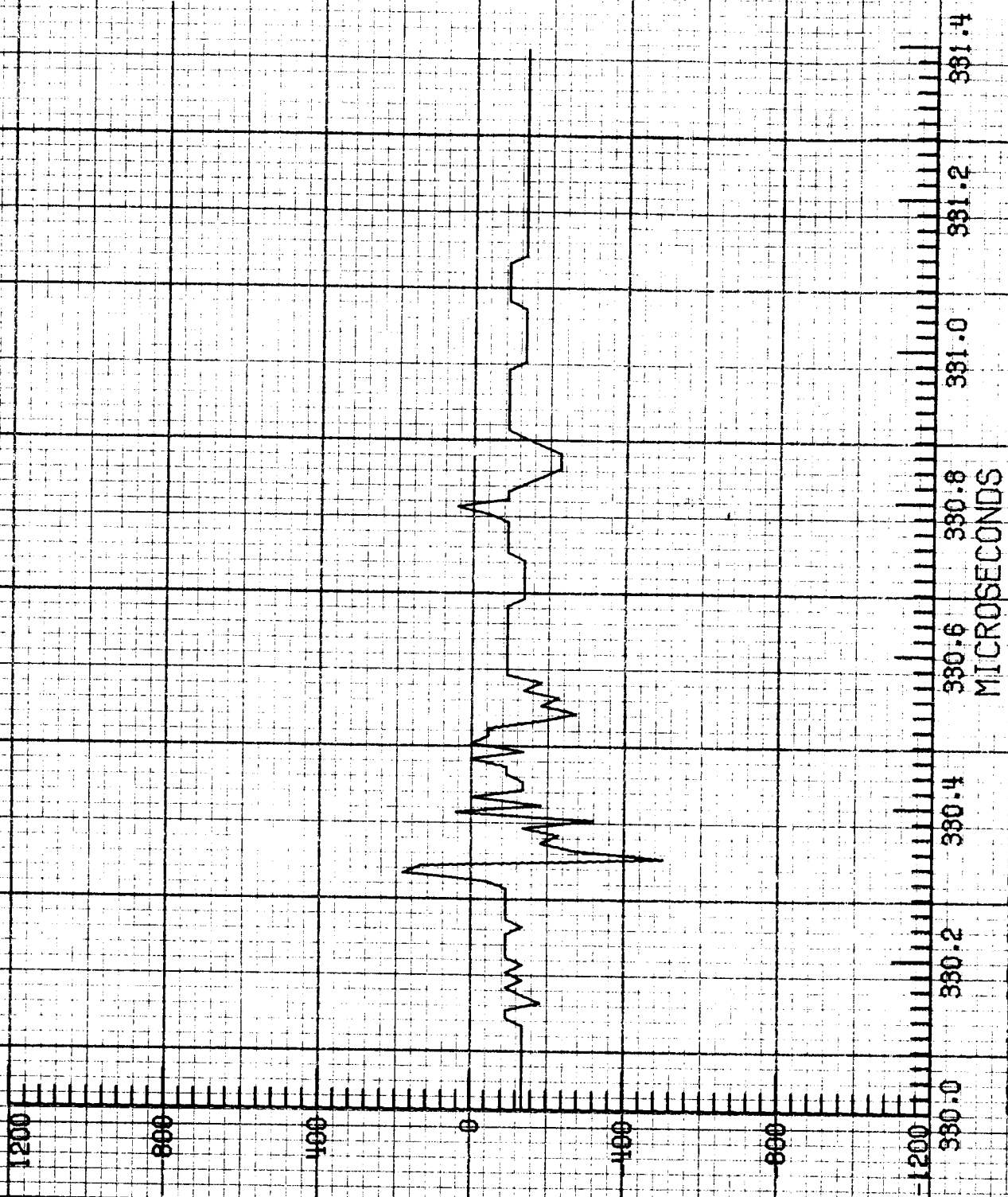
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N-021

B DOT 1 1/5



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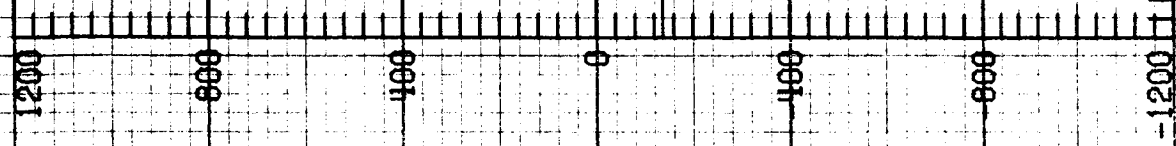
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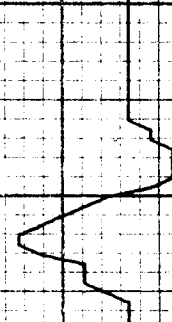
S-017

B DOT 1 I/S



MICROSECONDS

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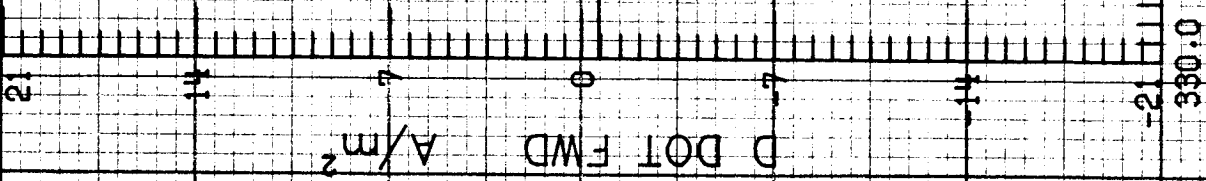
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1106 LIGHTNING/TK 8/M. THOMAS

RUN NO. 83

S-017



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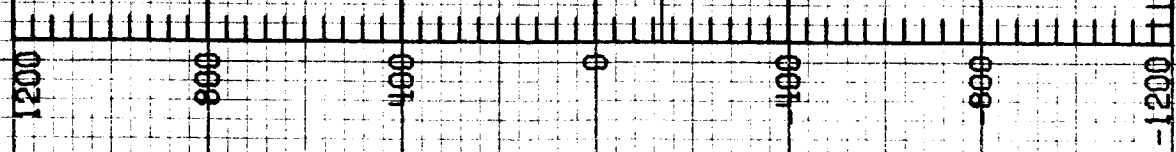
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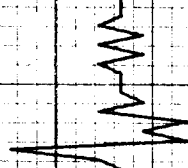
RUN NO. 33

S-017

B DOT 1 1/S



ORIGINAL PAGE IS
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768



MICROSECONDS

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F106 LIGHTNING/TK 8/M. THOMAS
RUN NO. 84
S-018
TEST NO. 83-036

D DOT FWD
A/m²

329.4 329.6 329.8 330.0 330.2 330.4 330.6 330.8
MICROSECONDS

ORIGINAL PAGE IS
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20:14:59.1549

895

TEST NO. 83-036

106 LIGHTNING/TK 10/M. THOMAS

RUN NO. 34

S-018

B DOT 1

1/5

1200

800

400

0

-400

-800

-1200

329.7

329.9

330.1

330.3

330.5

330.7

330.9

331.1

MICROSECONDS

20:14:59.4551

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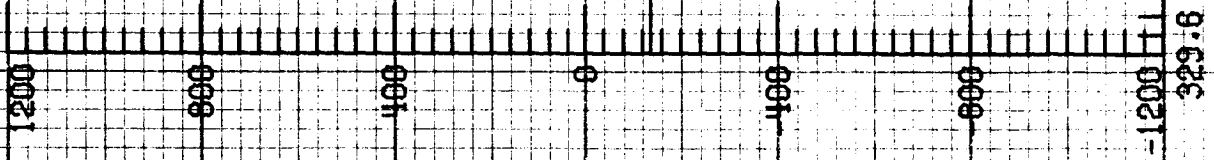
106 LIGHTNING/IK 10/M. THOMAS

S-019

RUN NO. 85

B DOT 1 I/S

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MICROSECONDS

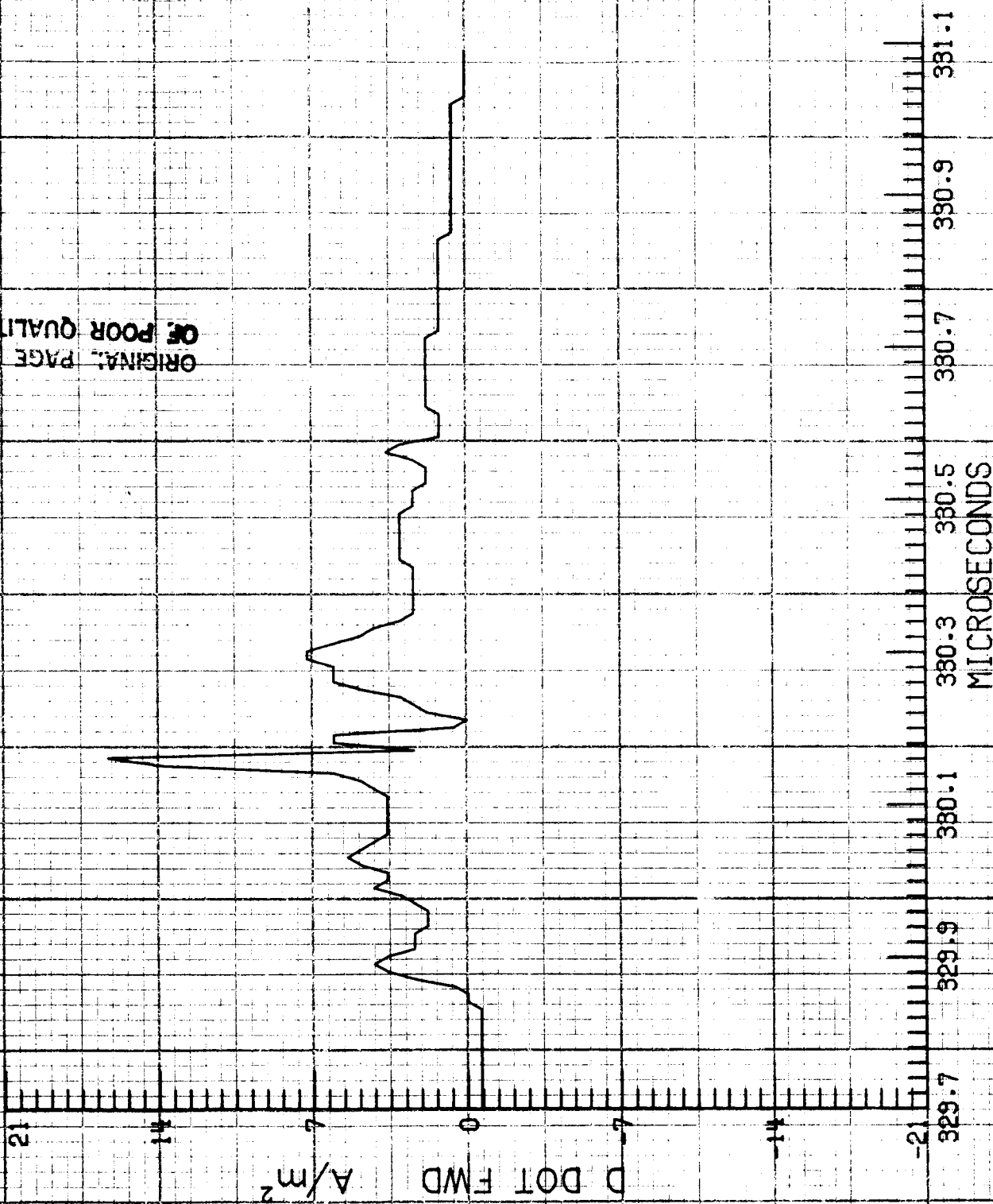
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897

TEST NO. 83-036

F106 LIGHTNING/TK 8/M. THOMAS
S-020

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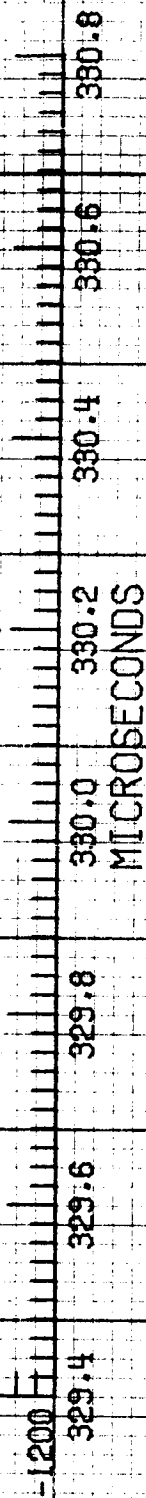
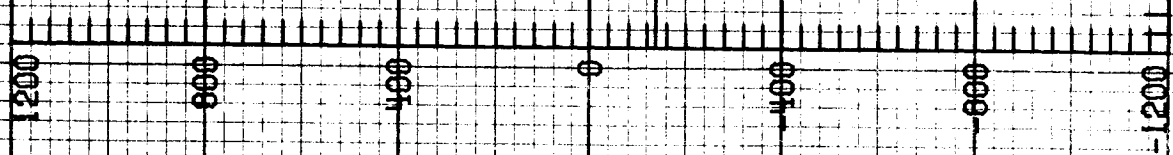
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TEST NO. 88-036

F106 LIGHTNING/TK 10/M. THOMAS

S-020

B DOT 1
T/S



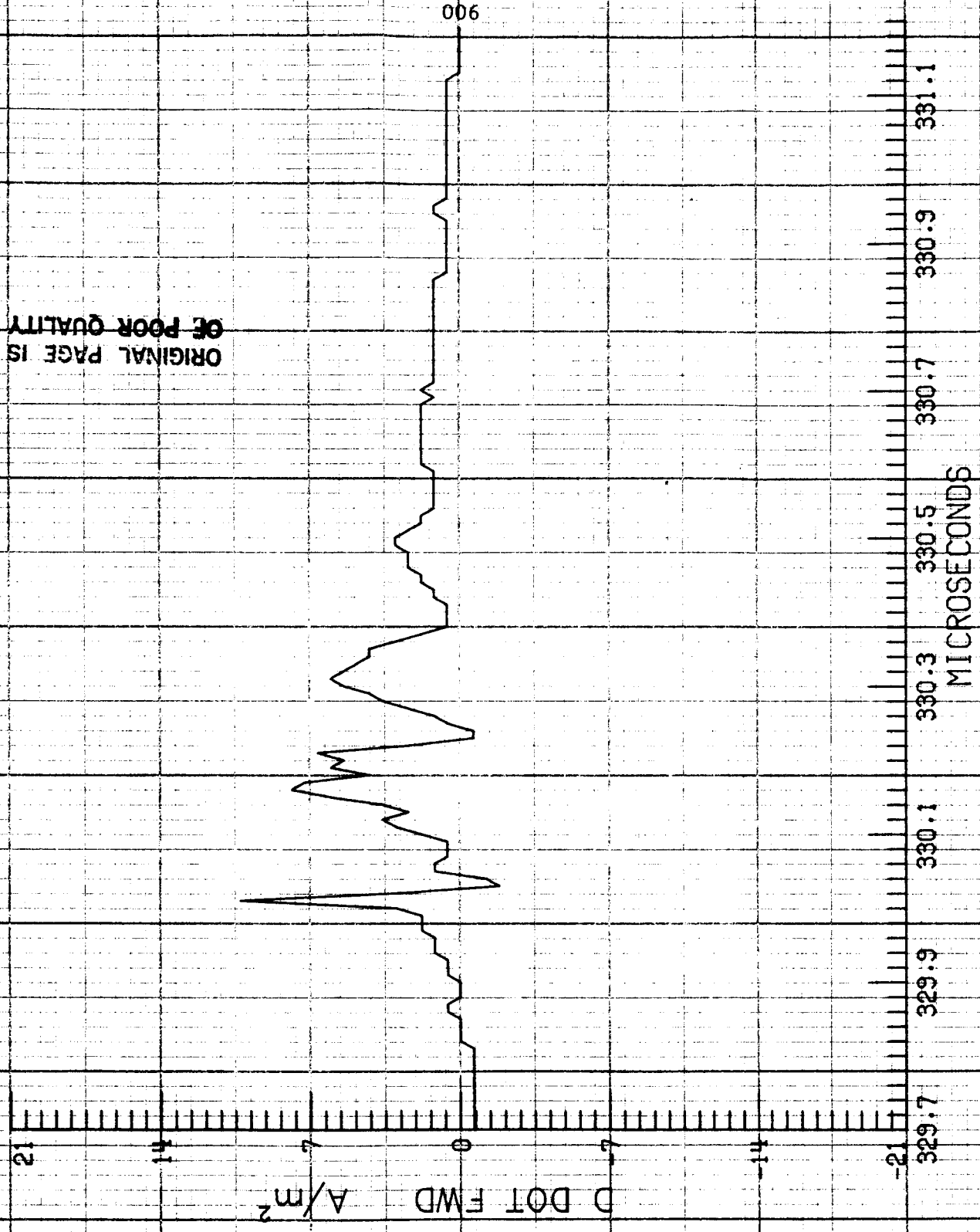
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668

TEST NO. 83-036

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RUN NO. 57
N-022



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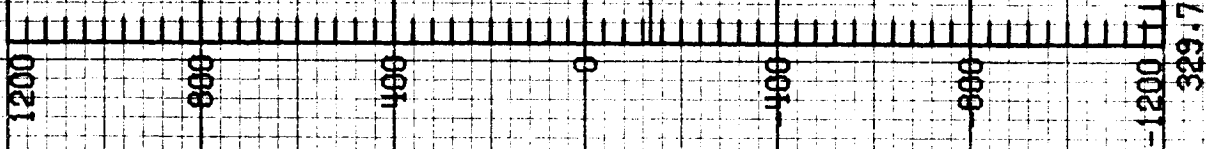
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F106 LIGHTNING/TK 10/M. THOMAS

N-022

RUN NO. 37

B DOT 1 I/S



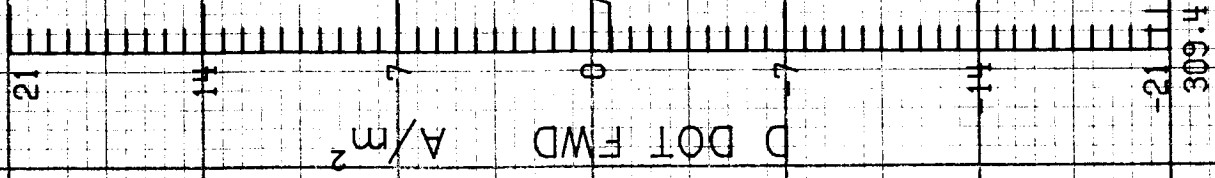
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TEST NO. 83-037

106 LIGHTNING/TK 8/M. THOMAS

S-001



ORIGINAL PAGE IS
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TEST NO. 83-037

F106 LIGHTNING/TK 10/M. THOMAS

S-001

B DOT 1

T/S

ORIGINAL PAGE IS
OF POOR QUALITY

1200

800

400

0

-400

-800

-1200

329.9

330.1

330.3

330.5

330.7

330.9

331.1

331.3

MICROSECONDS

23:21:10.0429

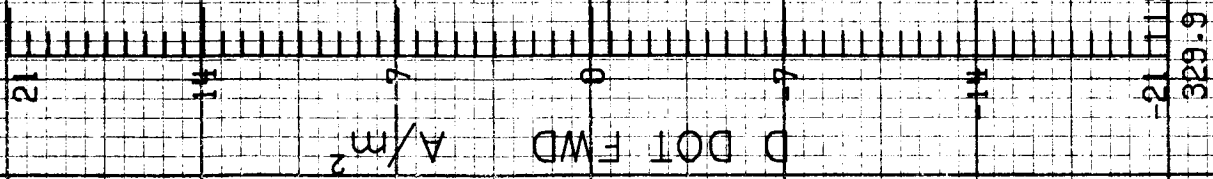
903

TEST NO. 83-037

F106 LIGHTNING/TK 8/M. THOMAS

S-002

RUN NO. 2



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TEST NO. 83-037

F106 LIGHTNING/TK 10/M.THOMAS

RUN NO. 2

S-002

B 001 1 1/5

ORIGINAL PAGE IS
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506

MICROSECONDS

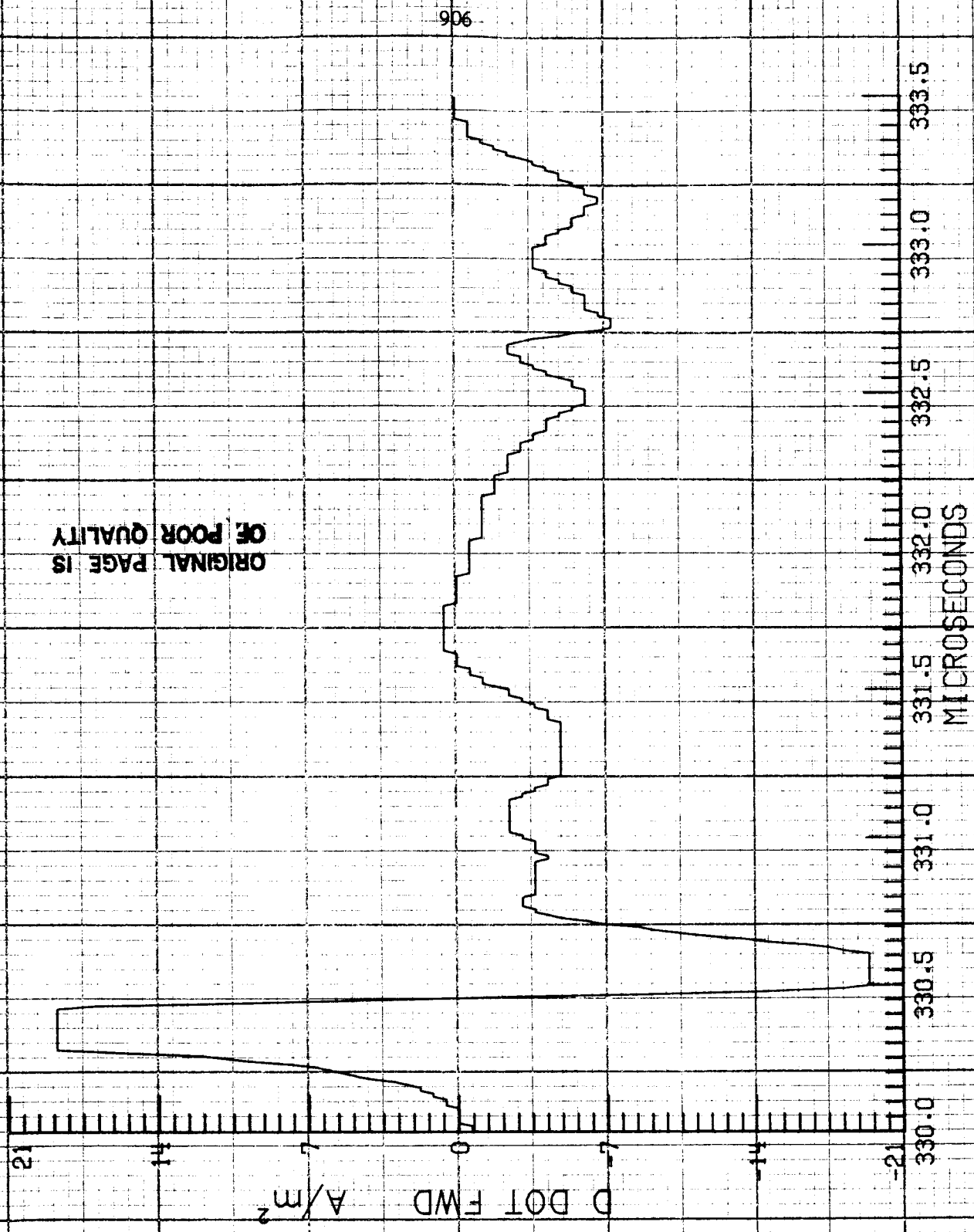
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TEST NO. 83-037

F106 LIGHTNING/TK 8/M. THOMAS

S-003

RUN NO. 8



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23:21:28.8811

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TEST NO. 83-037

106 LIGHTNING/TK 10/M. THOMAS

S-003

B BOT I T/S

1200
800
400
0
-400
-800
-1200

329.9

330.1

330.3

330.5

330.7

330.9

331.1

331.3

MICROSECONDS

23:21:28.868b

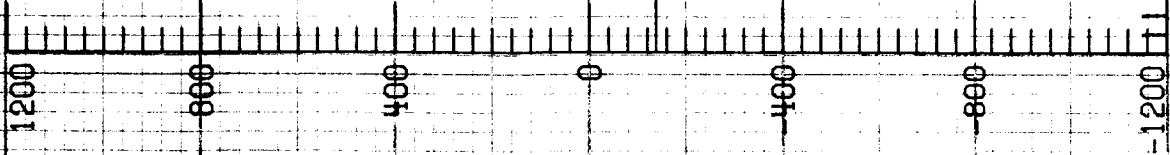
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F-106 LIGHTNING/TK 10/M.THOMAS

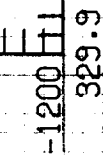
RUN NO. 4

N-001

B DOT L I/S



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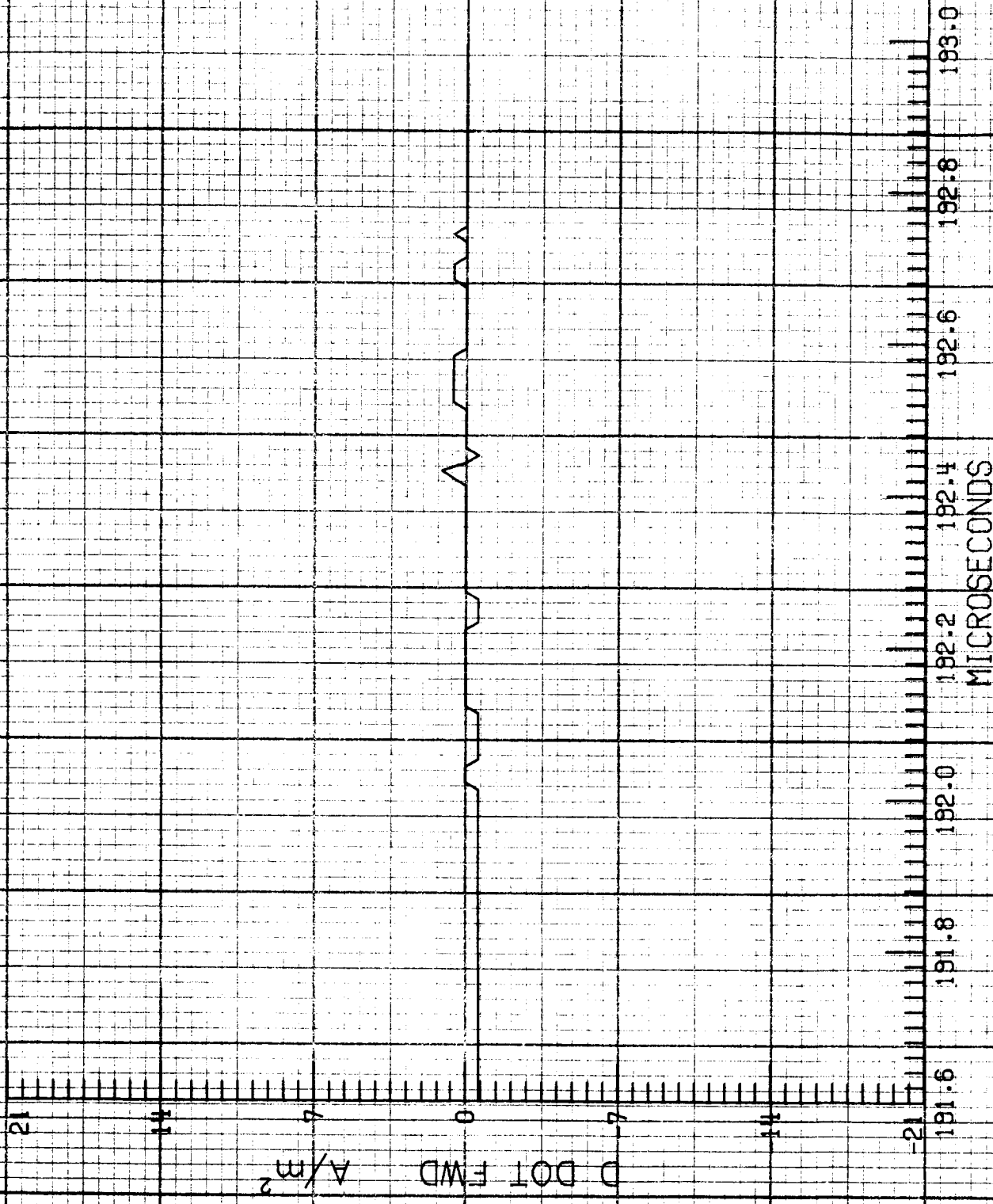


MICROSECONDS

23:26:39.5699

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RUN NO. 5
TEST NO. 83-037



TEST NO. 83-037

F106 LIGHTNING/TK 10/M.THOMAS

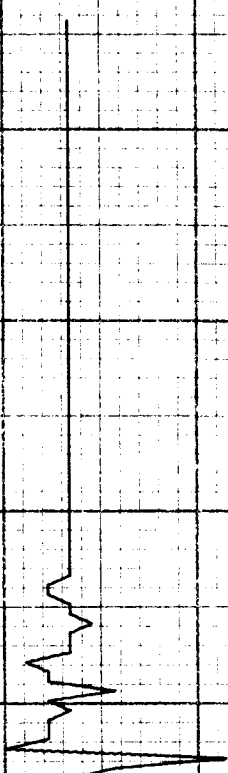
RUN NO. 5

S-004

B DOT 1 T/S

1200
600
0
-600
-1200

ORIGINAL PAGE IS
OF POOR QUALITY



MICROSECONDS

381.2
381.0
380.8
380.6
380.4
380.2
380.0
329.8

23:32:15-3892

ORIGINAL PAGE IS
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TEST NO. 83-037

F106 LIGHTNING/TK 8/M. THOMAS

S-004

RUN NO. 5

D DOT FWD A/m²

1060.5 1060.7 1060.9
1061.1 1061.3 1061.5 1061.7 1061.9
MICROSECONDS

23:32:15.3891

TEST NO. 83-037

106 LIGHTNING/TK 10/M.THOMAS

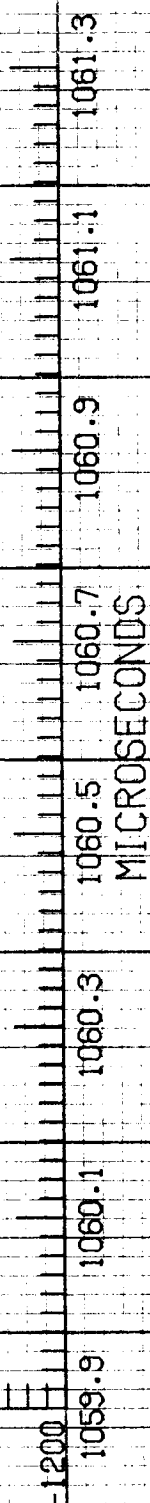
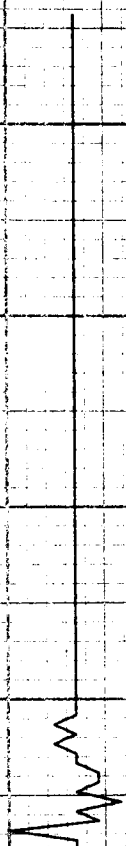
RUN NO. 5

S-004

B DOT 1 I/S



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MICROSECONDS

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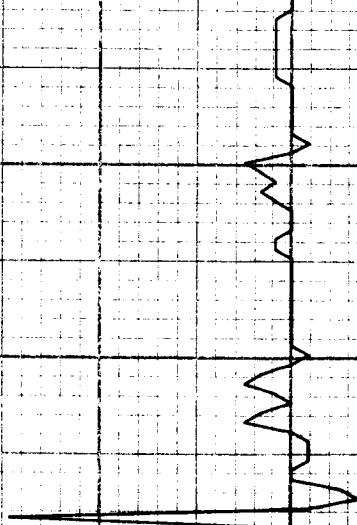
TEST NO. 83-037

F106 LIGHTNING/TK 8/M. THOMAS

N-002

RUN NO. 5

D DOT FWD
 A/m^2



MICROSECONDS

23:39:05.3289

TEST NO. 83-037

F106 LIGHTNING/TK 10/M. THOMAS

RUN NO. 6

N-002

B DOT 1

1/S

1200

800

400

0

-400

-800

-1200

329.7

329.9

330.1

330.3

330.5

330.7

330.9

331.1

MICROSECONDS

23:39:04.4637

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914

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TEST NO. 83-037

F106 LIGHTNING/IK 8/M.IHDMS
N-003

RUN NO. 7

D DOT FWD A/m^2



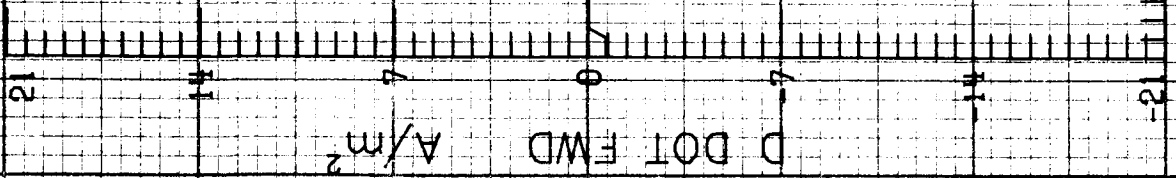
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TEST NO. 83-037

F106 LIGHTNING/TK 8/M. THOMAS

N-003

RUN NO. 7



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ORIGINAL PAGE IS
OF POOR QUALITY

TEST NO. 83-037

106 LIGHTNING/TK 10/M. THOMAS

N-003

B DOT 1

1/S

1200

800

400

0

-400

-800

-1200

329.2

329.4

329.6

329.8

330.0

330.2

330.4

330.6

MICROSECONDS

23:39:15.7988

917

TEST NO. 83-037

F106 LIGHTNING/TK 10/M.THOMAS

N-003

RUN NO. 7

B DOT 1 I/S

1200
600
0
-600
-1200

425.0

425.2

425.4

425.6

425.8

426.0

426.2

426.4

MICROSECONDS

23:39:15.7938

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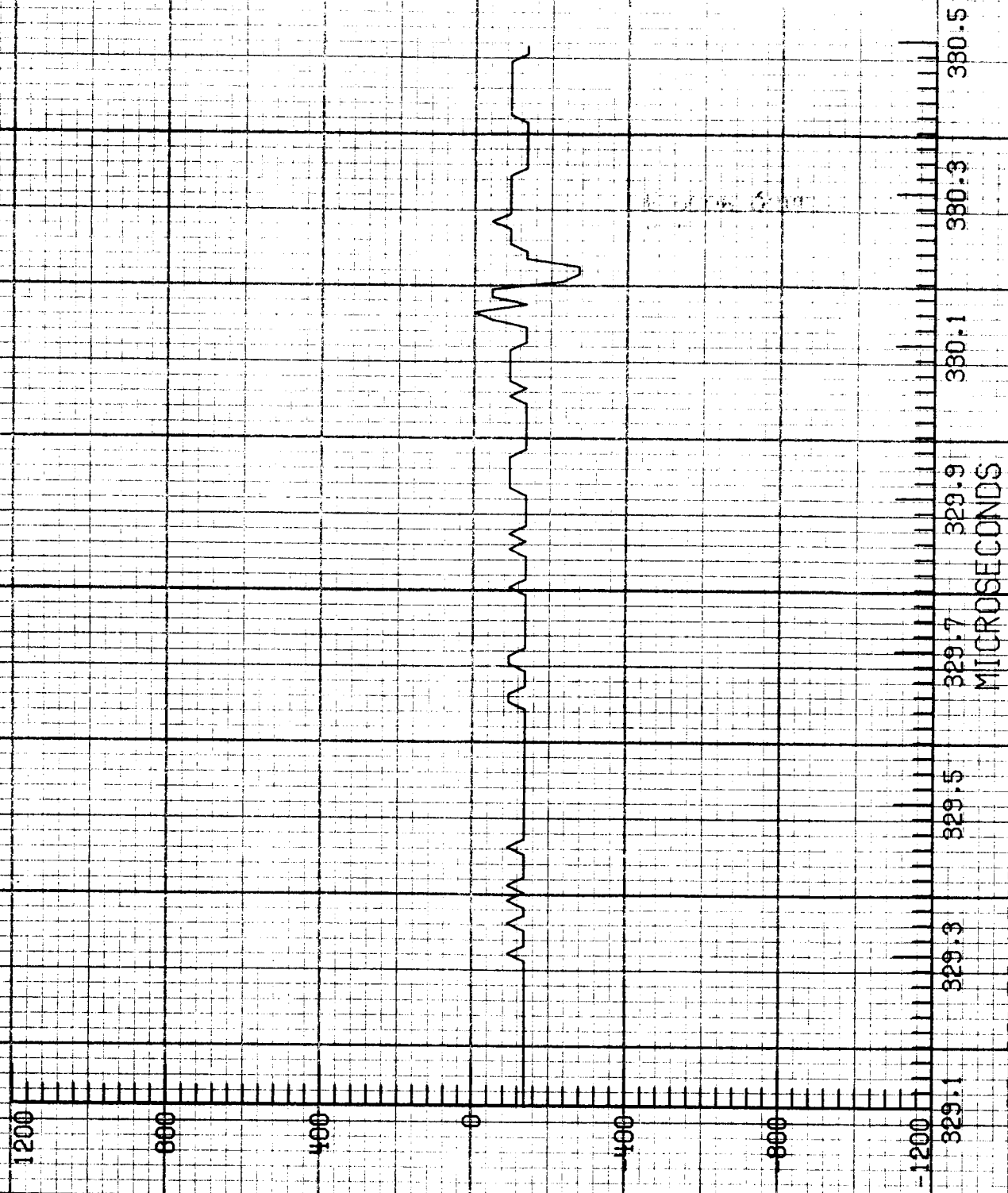
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RUN NO. 8

S-005

B DOT 1 1/S

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TEST NO. 83-037

F106 LIGHTNING/TK 8/M. THOMAS

S-007

RUN NO. 9

D DOT FWD A/m^2

-21 329.8 330.0 330.2 330.4 330.6 330.8 331.0 331.2

MICROSECONDS

23:45:54.2695

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920

TEST NO. 83-037

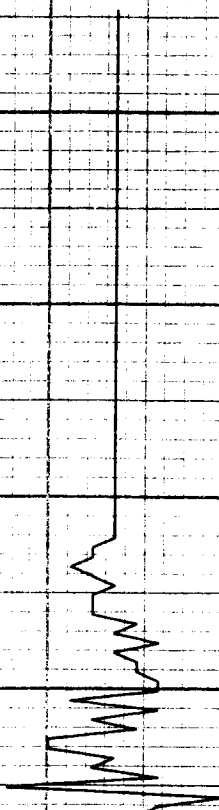
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S-007

RUN NO. 9

B DOT 1 I/S

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921

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MICROSECONDS

TEST NO. 83-037

F106 LIGHTNING/TK 8/M.THOMAS
RUN NO. 10

S-008

D DOT FWD
A/m²

380.0 380.2 380.4 380.6 380.8 381.0 381.2 381.4
MICROSECONDS

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TEST NO. 83-037

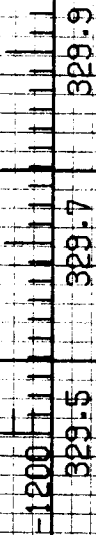
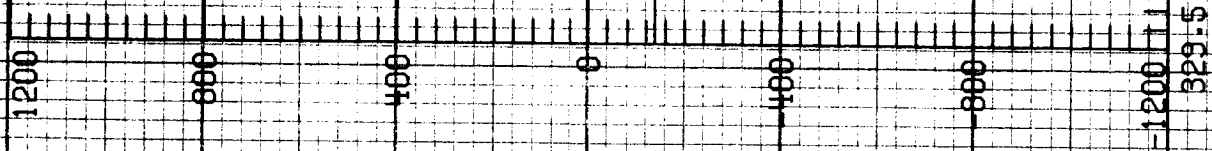
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RUN NO. 10

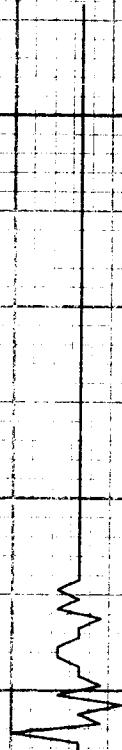
N-004

B DOT L

1/S



MICROSECONDS



TEST NO. 83-037

106 LIGHTNING/TK 8/M. THOMAS

S-009

RUN NO. 11

D DOT FWD A/m^2

12 11 10 9 8 7 6 5 4 3 2 1 0 -1 -2

329.6 329.8 330.0 330.2 330.4 330.6 330.8 331.0
MICROSECONDS

23:51:58.7434

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ORIGINAL PAGE IS
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TEST NO. 83-037

106 LIGHTNING/TK 10/M. THOMAS

S-009

RUN NO. 11

B DOT 1

I/S

1200

600

0

0

-600

-1200

329.9

330.1

330.3

330.5

330.7

330.9

331.1

331.3

MICROSECONDS

23:51:58.7431

925

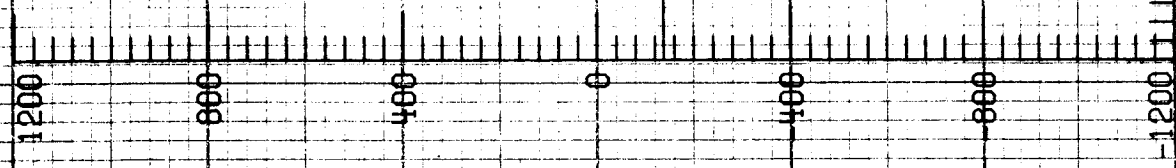
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F106 LIGHTNING/TK 10/M.THOMAS

RUN NO. 12

N-005

B DOT L 1/S



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TEST NO. 83-037

F106 LIGHTNING/TK 10/M. THOMAS

RUN NO. 13

S-010

B DOT 1
I/S

1200
600
0
-600
-1200

329.8

330.0

330.2

330.4

330.6

330.8

331.0

331.2

MICROSECONDS

23:57:39.3852

927

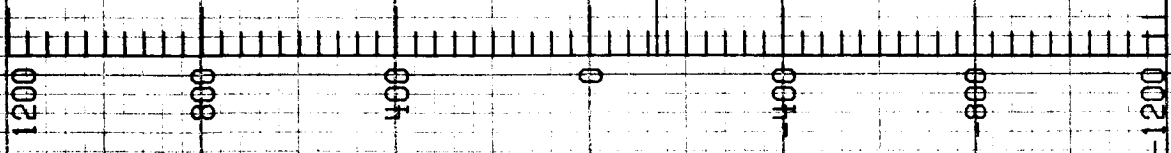
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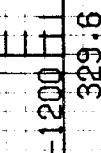
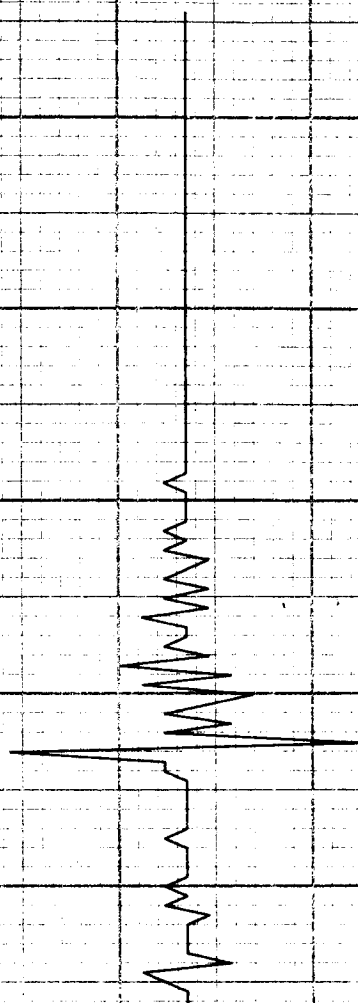
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N-006

B DOT 1 T/S



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MICROSECONDS

0:01:58.1767

TEST NO. 83-042

F106 LIGHTNING/TK 10/M. THOMAS

RUN NO. 1

N-001

B DOT 1 1/5

1200

800

400

0

-400

-800

-1200

329.4

329.6

329.8

330.0

330.2

330.4

330.6

330.8

MICROSECONDS

18:40:11.5074

ORIGINAL PAGE IS
OF POOR QUALITY

929

TEST NO. 83-042

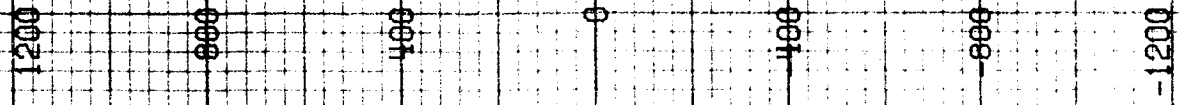
F106 LIGHTNING/TK 10/M. THOMAS

S-001

B 001 I/S

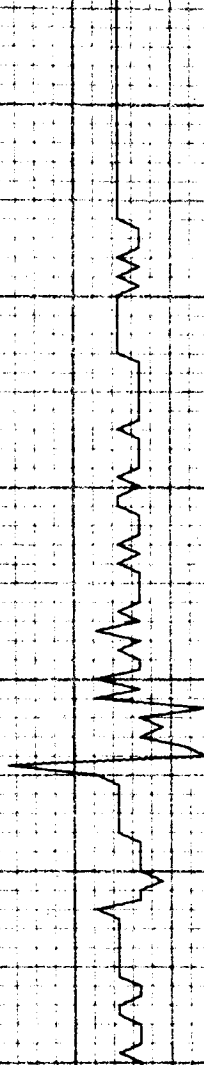
RUN NO. 2

ORIGINAL PAGE IS
OF POOR QUALITY



MICROSECONDS

19:16:42.5200



930

TEST NO. 83-042

F106 LIGHTNING/IK 10/M. THOMAS

N=002

B DOT II 1/5

-1200

-800

-400

0

400

800

-1200

329.5

329.7

329.9

330.1

330.3

330.5

330.7

330.9

MICROSECONDS

19:18:25.2076

ORIGINAL PAGE IS
OF POOR QUALITY

931

TEST NO. 83-042

F106 LIGHTNING/TK 10/M. THOMAS

N-003

B DOT 1 1/5

ORIGINAL PAGE IS
OF POOR QUALITY

1200
800
400
0
-400
-800
-1200

329.5 329.7 329.9

330.1 330.3 330.5 330.7 330.9

MICROSECONDS

19:18:30.7181

TEST NO. 83-044

F106 LIGHTNING/TK, 4/M, THOMAS

3-001

$\times 10^3$

4.8

3.2

1.6

0

1.6

3.2

4.8

T/s

B_w

ORIGINAL PAGE IS
OF POOR QUALITY

81.6

81.8

82.0

82.2

82.4

82.6

82.8

83.0

MICROSECONDS

CHANNEL NO. 3.1

12

0

4

0

4

0

12

81.6

81.8

82.0

82.2

82.4

82.6

82.8

83.0

MICROSECONDS

CHANNEL NO. 3.2

S-001

D_r A/m²

ORIGINAL PAGE IS
OF POOR QUALITY

934

ORIGINAL FILE IS
OF POOR QUALITY

S-001

D_t
 A/m^2

12

0

0

0

0

0

12

81.5

81.7

81.9

82.1

82.3

82.5

82.7

82.9

MICROSECONDS

CHANNEL NO. 4.1

935

ORIGINAL PAGE IS
OF POOR QUALITY

$\times 10^{10}$

24

16

8

0

8

16

24

I. A/s

S-001

83.0

82.8

82.6

82.4

82.2

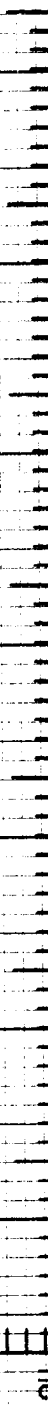
82.0

81.8

81.6

MICROSECONDS

CHANNEL NO. 4.2



ORIGINAL PAGE IS
OF POOR QUALITY

TEST NO. 83-044

F106 LIGHTNING/TK-4/M. THOMAS

5-003

$\times 10^3$

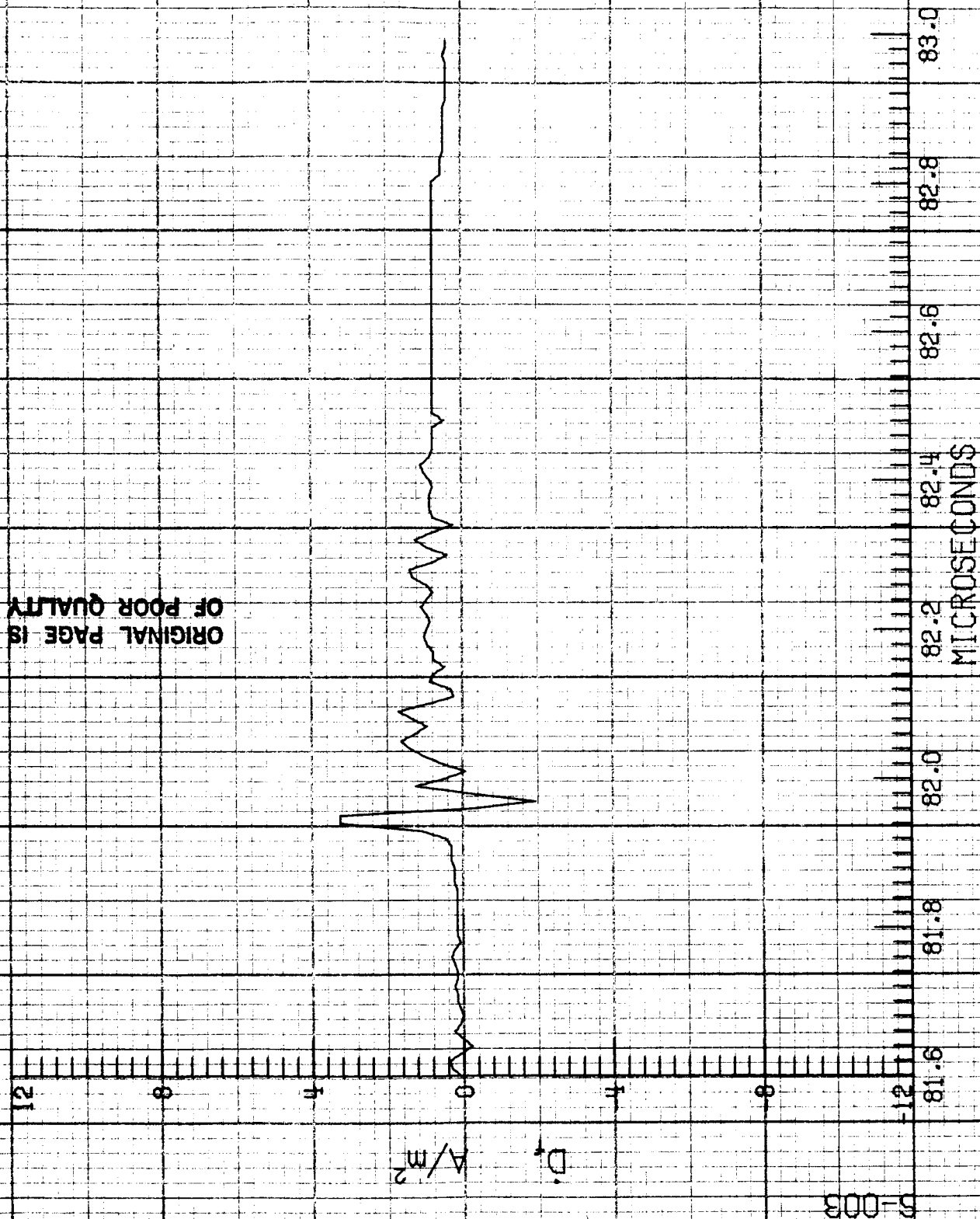
T/s

B_{wr}

81.5 81.7 81.9 82.1 82.3 82.5 82.7 82.9

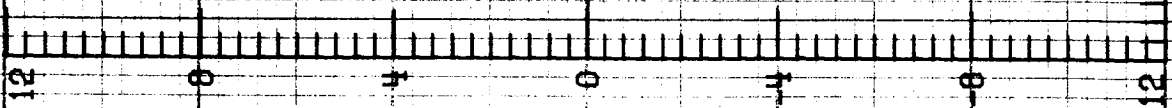
MICROSECONDS

CHANNEL NO. 3.1



ORIGINAL FILE IS
OF POOR QUALITY

5-003



D_t
 A/m^2

81.5

81.7

81.9

82.1

82.3

82.5

82.7

82.9

MICROSECONDS

CHANNEL NO. 4.1

989

$\times 10^{10}$

24

16

8

I.
A/s

0

8

S-003

24

81.5

81.7

81.9

82.1

82.3

82.5

82.7

82.9

MICROSECONDS

CHANNEL NO. 4.2

ORIGINAL PAGE IS
OF POOR QUALITY

076



TEST NO. 83-044

ORIGINAL PAGE IS
OF POOR QUALITY

F106 LIGHTNING/TK.4/M. THOMAS

3-005

$\times 10^3$

T/s

B_w

4.8

3.2

1.6

0

1.6

3.2

4.8

81.7

81.9

82.1

82.3

82.5

82.7

82.9

83.1

MICROSECONDS

CHANNEL NO. 3.1

ORIGINAL PAGE IS
OF POOR QUALITY

21

D. $\mu\text{A}/\text{m}^2$

S-005

12

81.6

81.8

82.0

82.2

82.4

82.6

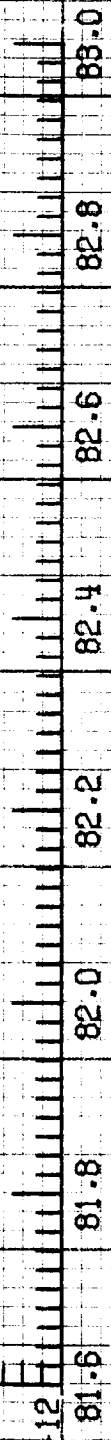
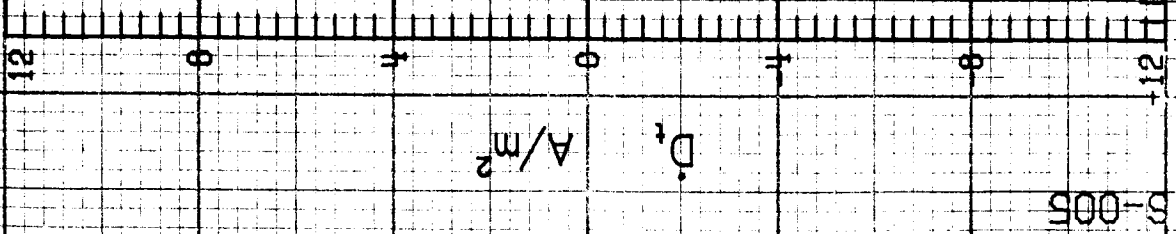
82.8

83.0

MICROSECONDS

CHANNEL NO. 3.2

ORIGINAL PAGE IS
OF POOR QUALITY



CHANNEL NO. 4.1

$\times 10^{10}$

24

16

8

I.
A/s

0

16

24

3-005

81.6

81.8

82.0

82.2

82.4

82.6

82.8

83.0

MICROSECONDS

CHANNEL NO. 4.2

944

ORIGINAL PAGE IS
OF POOR QUALITY

TEST NO. 83-044

F106 LIGHTNING/TK.4/M. THOMAS

S-006

$\times 10^3$

T/s

B_{wr}

83.0

82.8

82.6

82.4

82.2

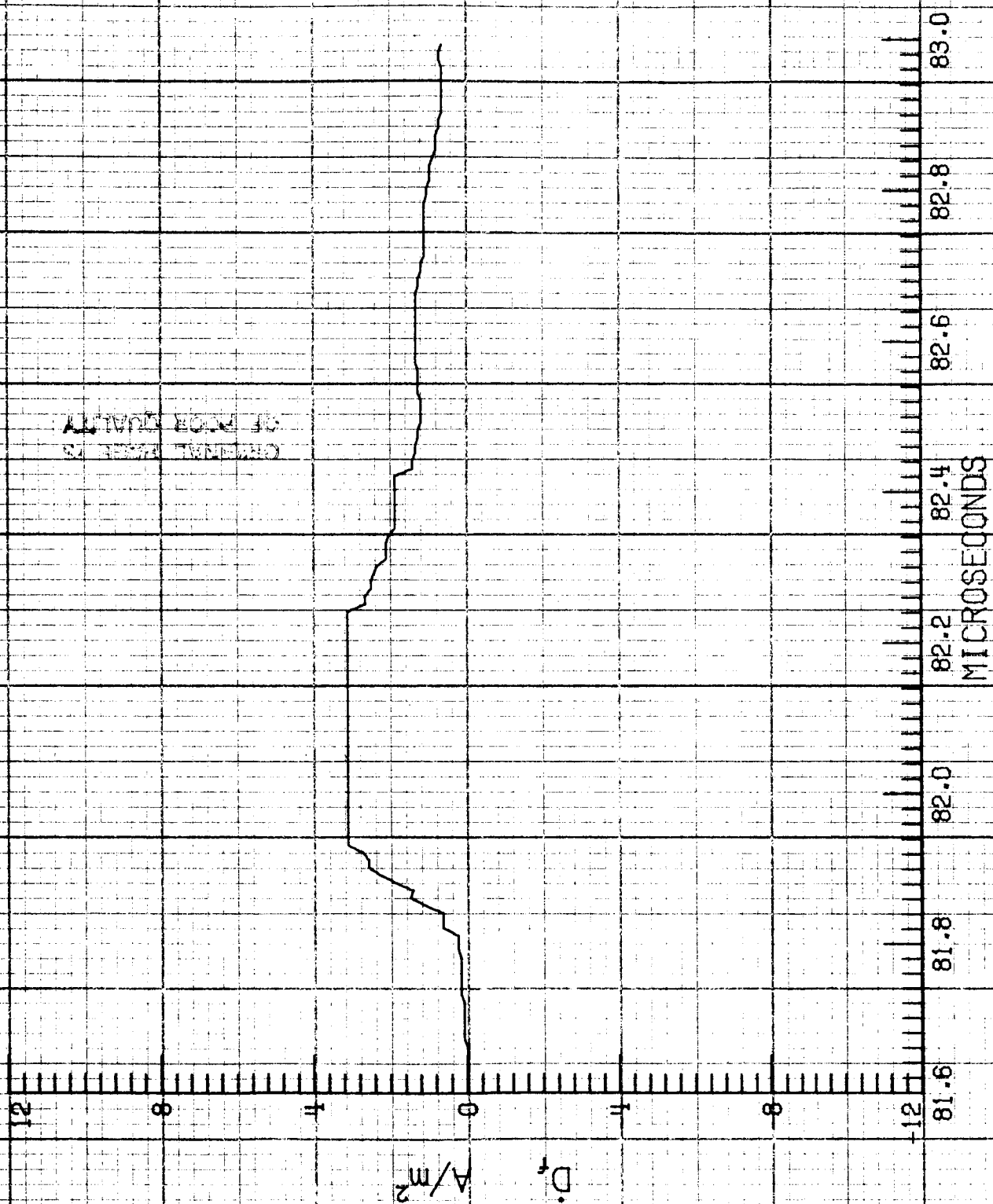
82.0

81.8

81.6

MICROSECONDS

CHANNEL NO. 3.1



ORIGINAL PAGE IS
OF POOR QUALITY

TEST NO. 83-044

106 LIGHTNING/TK.5/M. THOMAS

900-9

$$D_t \quad A/m^2$$


81.3

81.5

81.7

100

82

7
8
9

50
51
52

82-7

MICROSECONDS

CHANNEL NO. 4.1

476

ORIGINAL PAGE IS
OF POOR QUALITY

5-006

$\times 10^{10}$

I.
A/s

24
16
8
0
8
16
24

81.3
81.5
81.7
81.9
82.1
82.3
82.5
82.7

MICROSECONDS

CHANNEL NO. 4.2

846

TEST NO. 83-044

F106 LIGHTNING/TX.4/M.THOMAS

S-007

$\times 10^3$

B_r
T/s

81.7

81.9

82.1

82.3

82.5

82.7

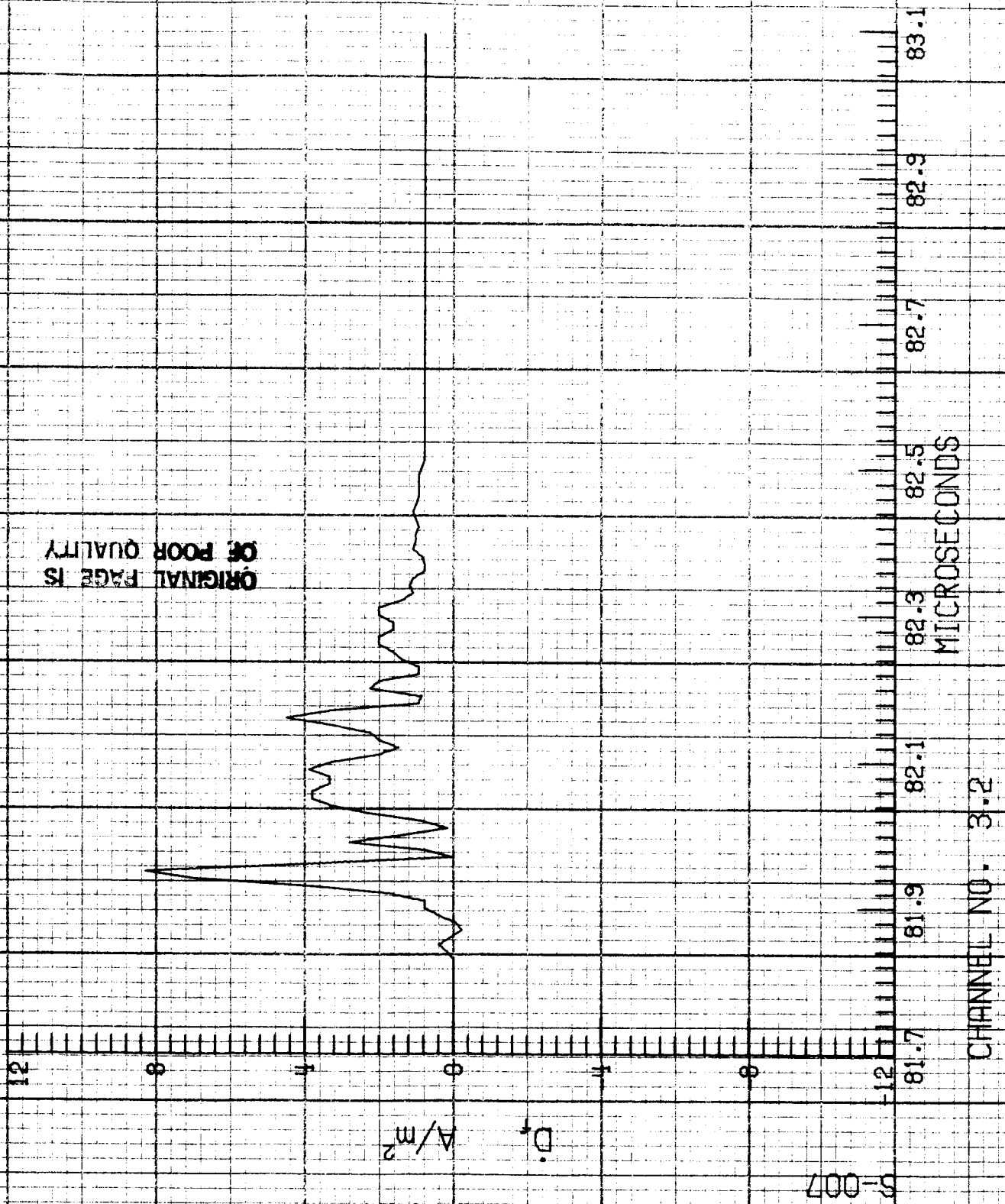
82.9

83.1

MICROSECONDS

CHANNEL NO. 3.1

949





D_t A/m²



MICROSECONDS

CHANNEL NO. 4.1

3-007

ORIGINAL PAGE IS
OF POOR QUALITY

$\times 10^{10}$

24

16

8

I
A/s

0

16

24

81.7

81.9

82.1

82.3

82.5

82.7

82.9

83.1

MICROSECONDS

CHANNEL NO. 4.2

5-007

ORIGINAL PAGE IS
OF POOR QUALITY

952

$\times 10^3$

4.8

3.2

1.6

0

1.6

3.2

4.8

T/s

B_w

S-008

90.6

90.8

91.0

91.2

91.4

91.6

91.8

92.0

MICROSECONDS

CHANNEL NO. 3.1

12 8 4 0 4 8

D. A/m²

0-008

90.6 90.8 91.0 91.2 91.4 91.6 91.8 92.0

MICROSECONDS

CHANNEL NO. 3.2

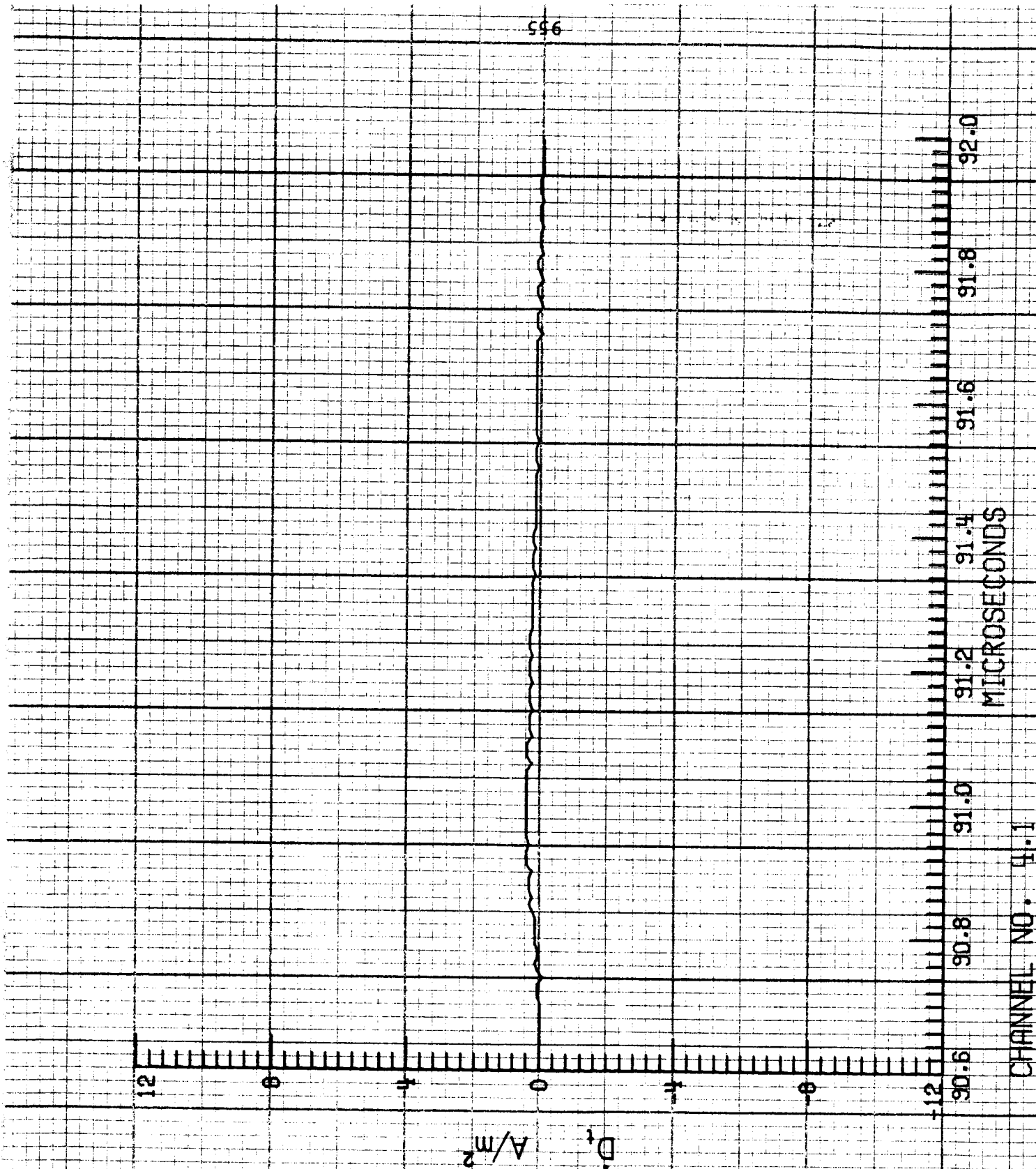
ORIGINAL PAGE IS
OF POOR QUALITY

TEST NO. 83-044

ORIGINAL PAGE IS
OF POOR QUALITY

F106 LIGHTNING/TK.5/M. THOMAS

5-008



CHANNEL NO. 4.1

$\times 10^{10}$

24

16

8

0

8

16

24

I.
A/s

5-008

30.6

30.8

31.0

31.2

31.4

31.6

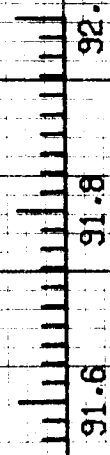
31.8

32.0

MICROSECONDS

CHANNEL NO. 4.2

ORIGINAL PAGE IS
OF POOR QUALITY



$\times 10^5$

4.8

3.2

1.6

0

1.6

3.2

4.8

103.4

103.6

103.8

104.0

104.2

104.4

104.6

104.8

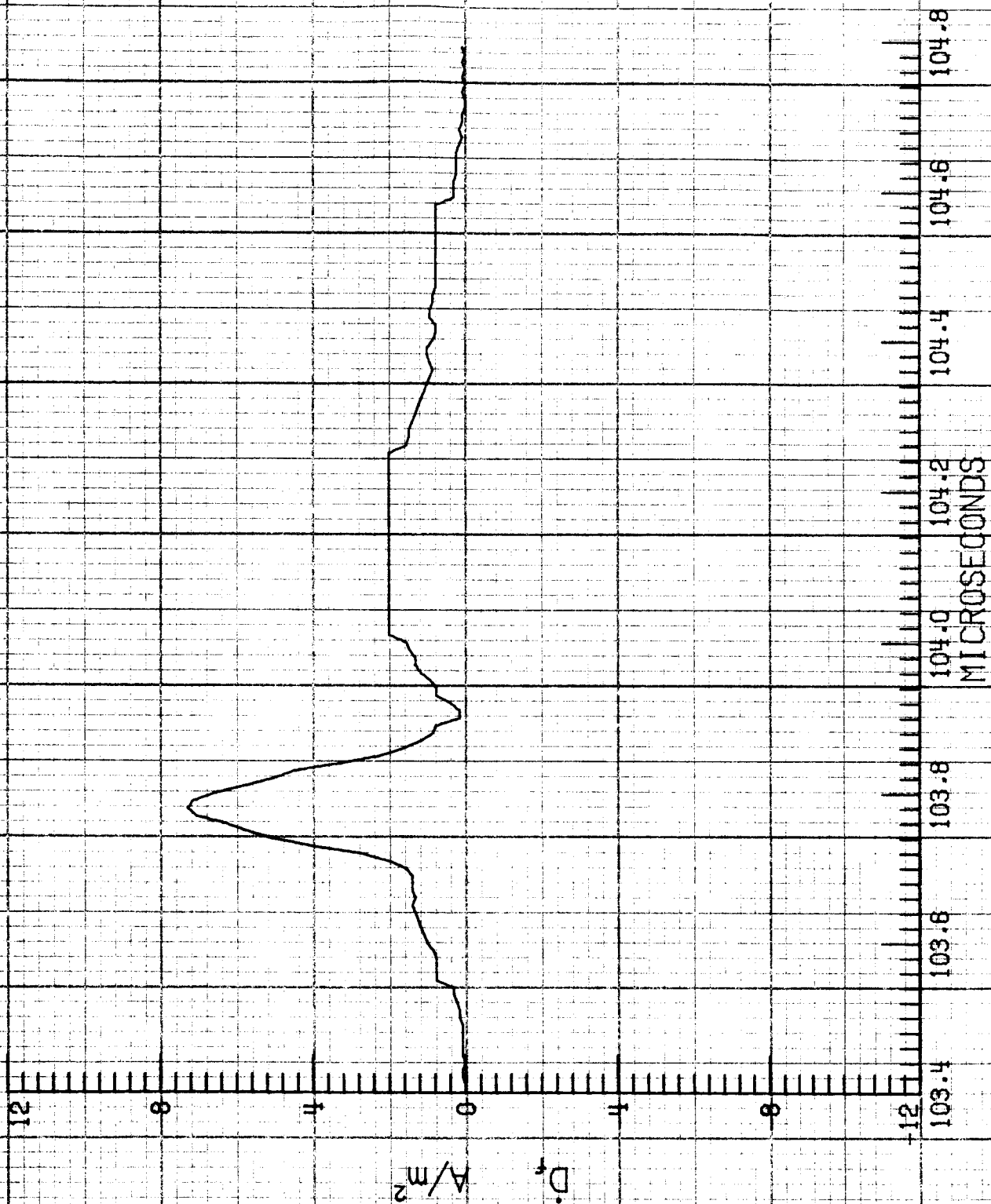
T/S

B_w

3-008

MICROSECONDS

CHANNEL NO. 3.1



3-008

CHANNEL NO. 3.2



MICROSECONDS

CHANNEL NO. 4.1

3-008

D_t A/m²

ORIGINAL PAGE IS
OF POOR QUALITY

$\times 10^{10}$

24

16

8

0

8

16

24

A/s

I.

5-008

104.8

104.6

104.4

104.2

104.0

103.8

103.6

103.4

MICROSECONDS

CHANNEL NO. 4.2

TEST NO. 83-044

F106 LIGHTNING/TK.4/M. THOMAS

8-009

$\times 10^3$

T/S

DB

MICROSECONDS

CHANNEL NO. 3.1

196

12

0

1

D_f
 A/m^2

1

0

12

81.5

82.0

82.5

83.0

83.5

84.0

84.5

85.0

5-009

CHANNEL NO. 3.2

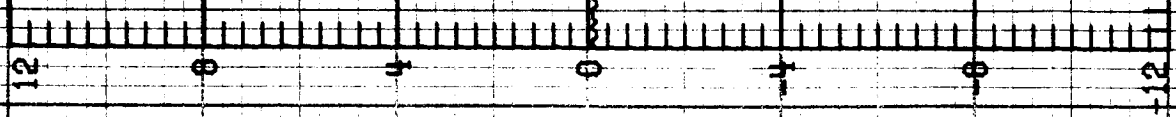
MICROSECONDS

962

TEST NO. 83-044

F106 LIGHTNING/TK.5/M. THOMAS

3-009



CHANNEL NO. 4.1

MICROSECONDS

ORIGINAL PAGE IS
OF POOR QUALITY

ORIGINAL PAGE IS
OF POOR QUALITY

$\times 10^{10}$

24

16

8

I.
A/s

0

16

24

81.0

81.5

82.0

82.5

83.0

83.5

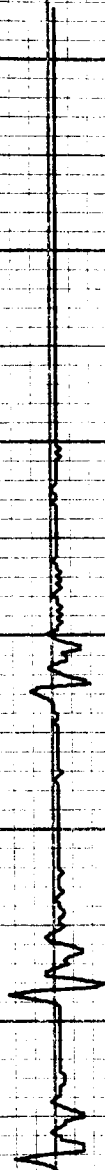
84.0

84.5

MICROSECONDS

CHANNEL NO. 4.2

6009



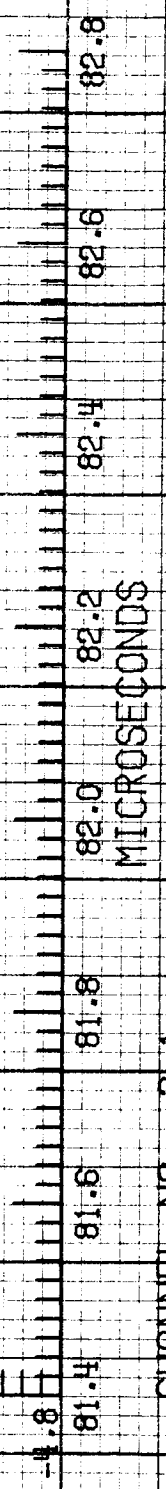
TEST NO. 83-044

F106 LIGHTNING/TK.4/M. THOMAS

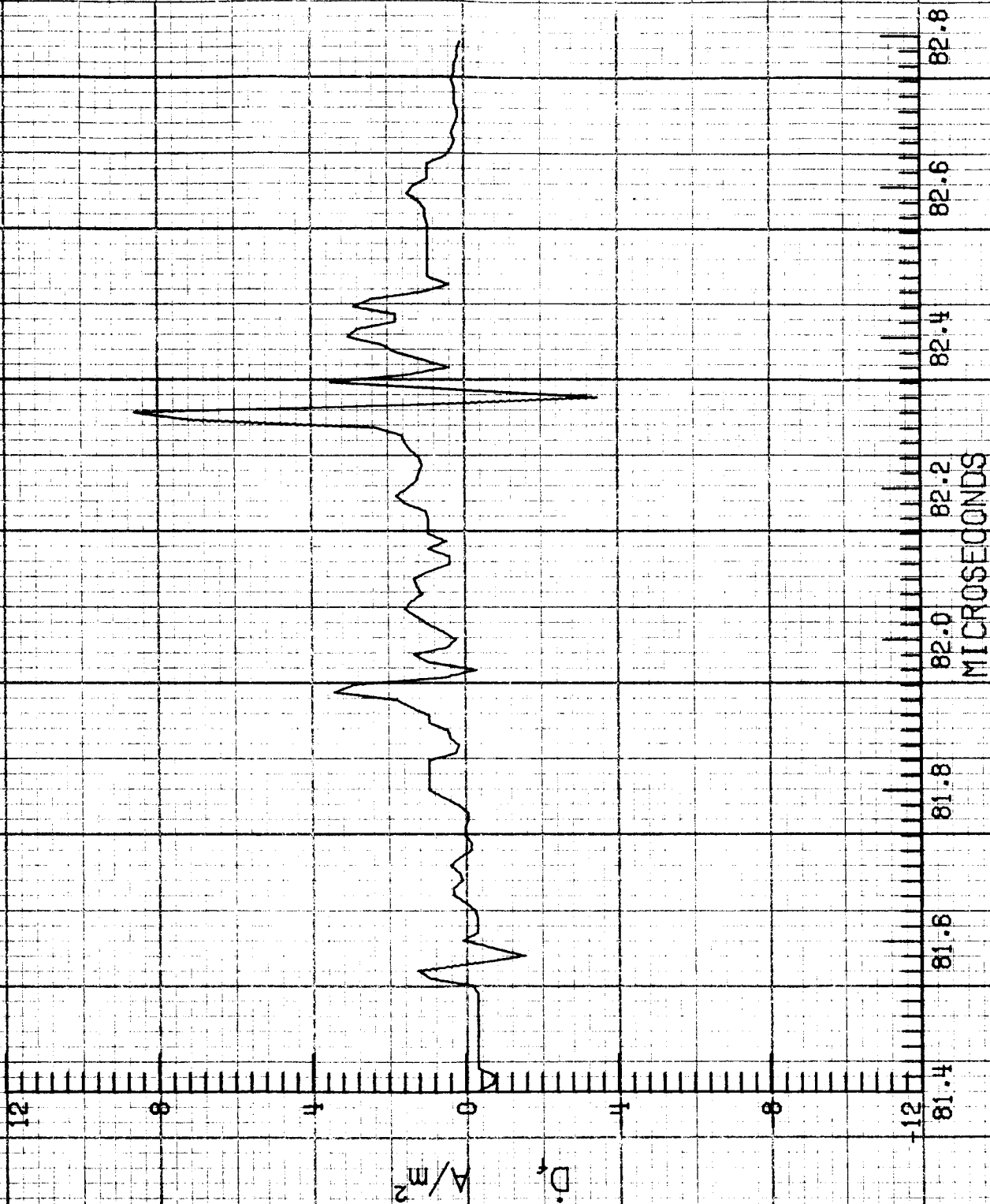
3-010

$\times 10^3$

$\frac{B \cdot T}{S}$



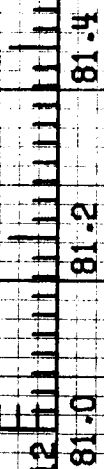
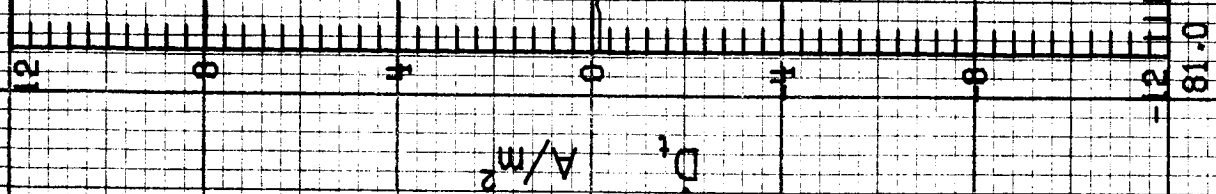
CHANNEL NO. 31.1



CHANNEL NO. 3-2

ORIGINAL PAGE IS
OF POOR QUALITY

S-010



CHANNEL NO. 4-1

967

$\times 10^{10}$

24

16

8

I.
A/s

0

-8

-24

81.0

81.2

81.4

81.6

81.8

82.0

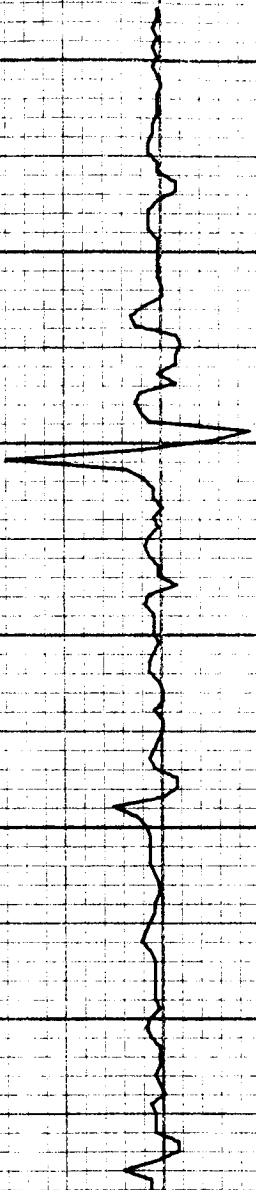
82.2

82.4

MICROSECONDS

CHANNEL NO. 4.2

3-010



$\times 10^5$

4.8

3.2

1.6

0

1.6

3.2

4.8

T/s

B_w

N-001

TEST NO. 83-044

F-106 LIGHTNING/TK.4/M.THOMAS

ORIGINAL PAGE IS
OF POOR QUALITY

ORIGINAL PAGE IS
OF POOR QUALITY

83.0

82.8

82.6

82.4

82.2

82.0

81.8

81.6

MICROSECONDS

CHANNEL NO. 3.1

12 8 4 0 4 8 12

D_f
 A/m^2

N-001

076

81.6 81.8 82.0 82.2 82.4 82.6 82.8 83.0

MICROSECONDS

CHANNEL NO. 3.2

TEST NO. 83-044

ORIGINAL PAGE IS
OF POOR QUALITY

F106 LIGHTNING/TK.4/M.THOMAS

S-012

$\times 10^3$

T/s

B_{wr}



CHANNEL NO. 3.1

12

8

4

0

4

8

-12

81.6

82.0

82.2

82.4

82.6

82.8

83.0

83.2

D_t
 A/m^2

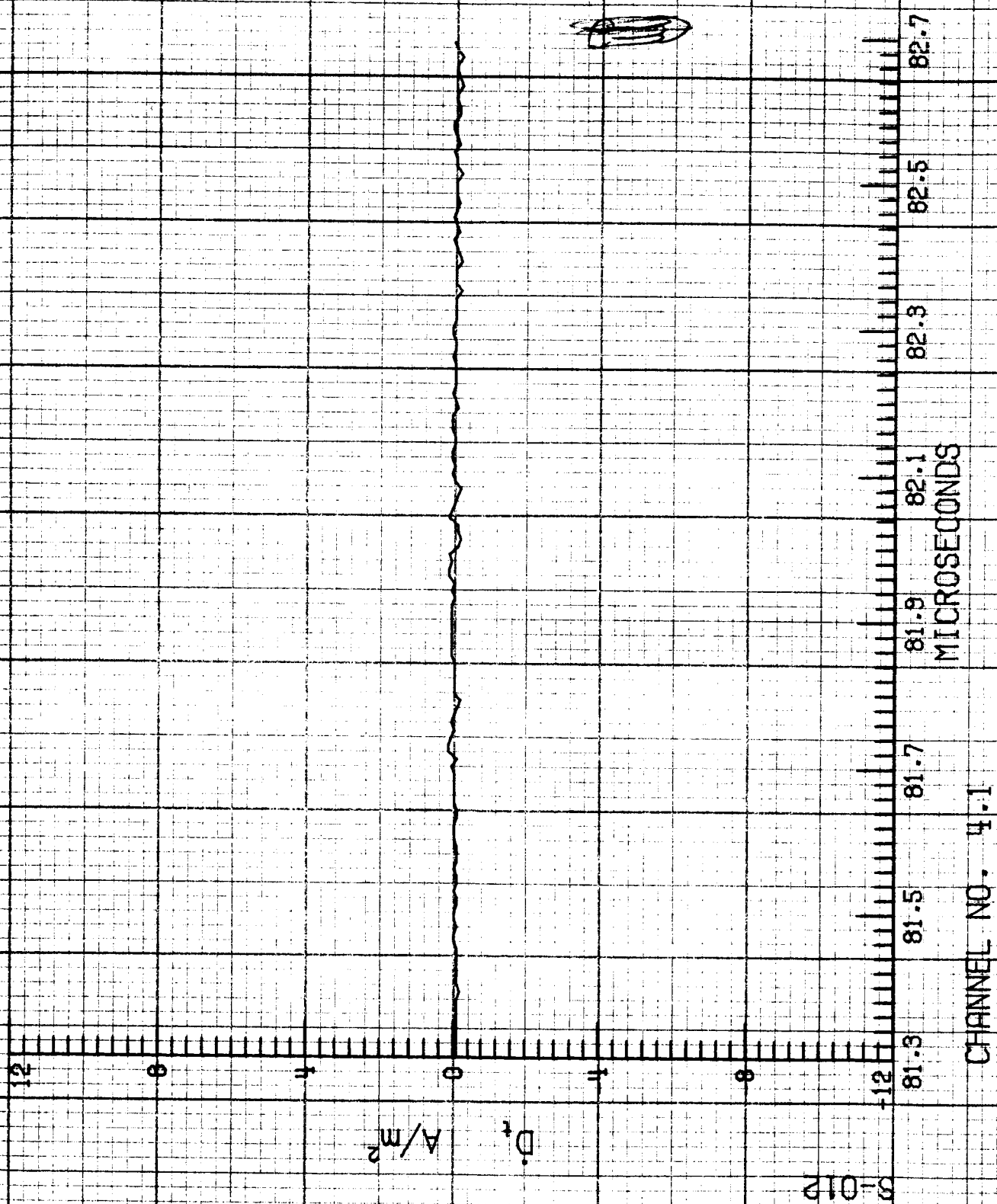
5-012

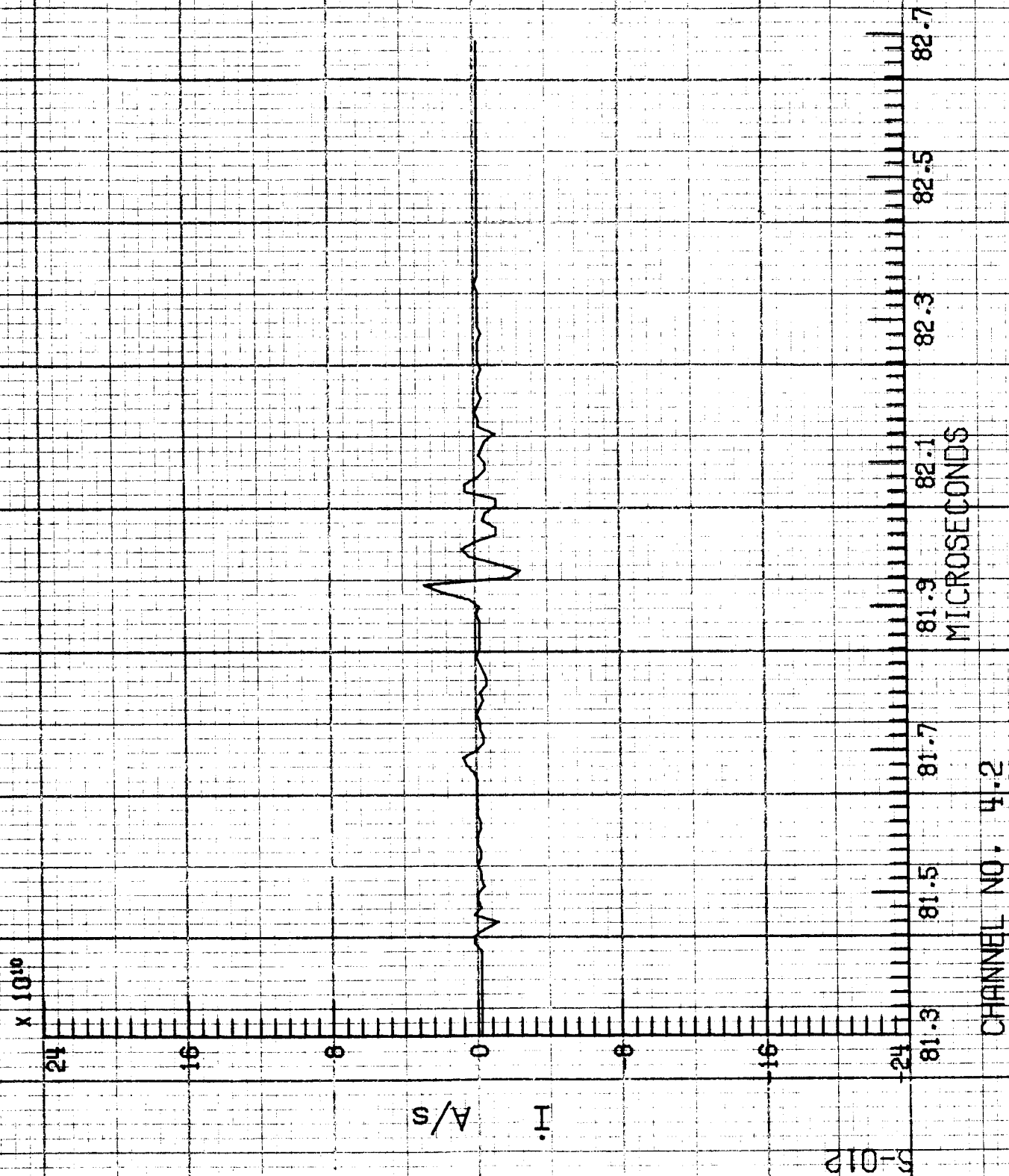
MICROSECONDS

CHANNEL NO. 3.2

916

ORIGINAL PAGE IS
OF POOR QUALITY



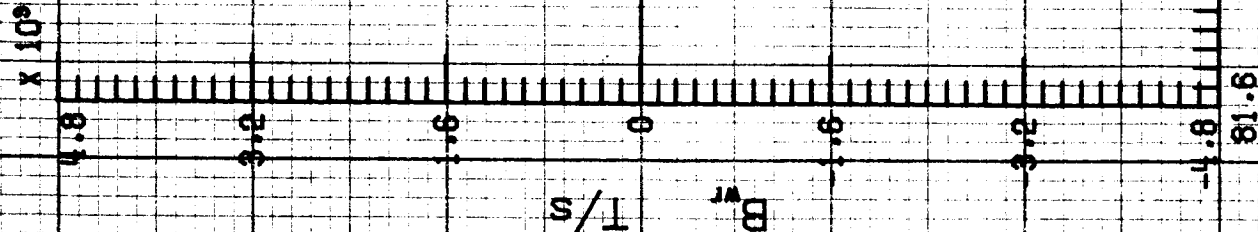


ORIGINAL PAGE IS
OF POOR QUALITY

TEST NO. 83-044

F106 LIGHTNING/TK.4/M. THOMAS

N-002

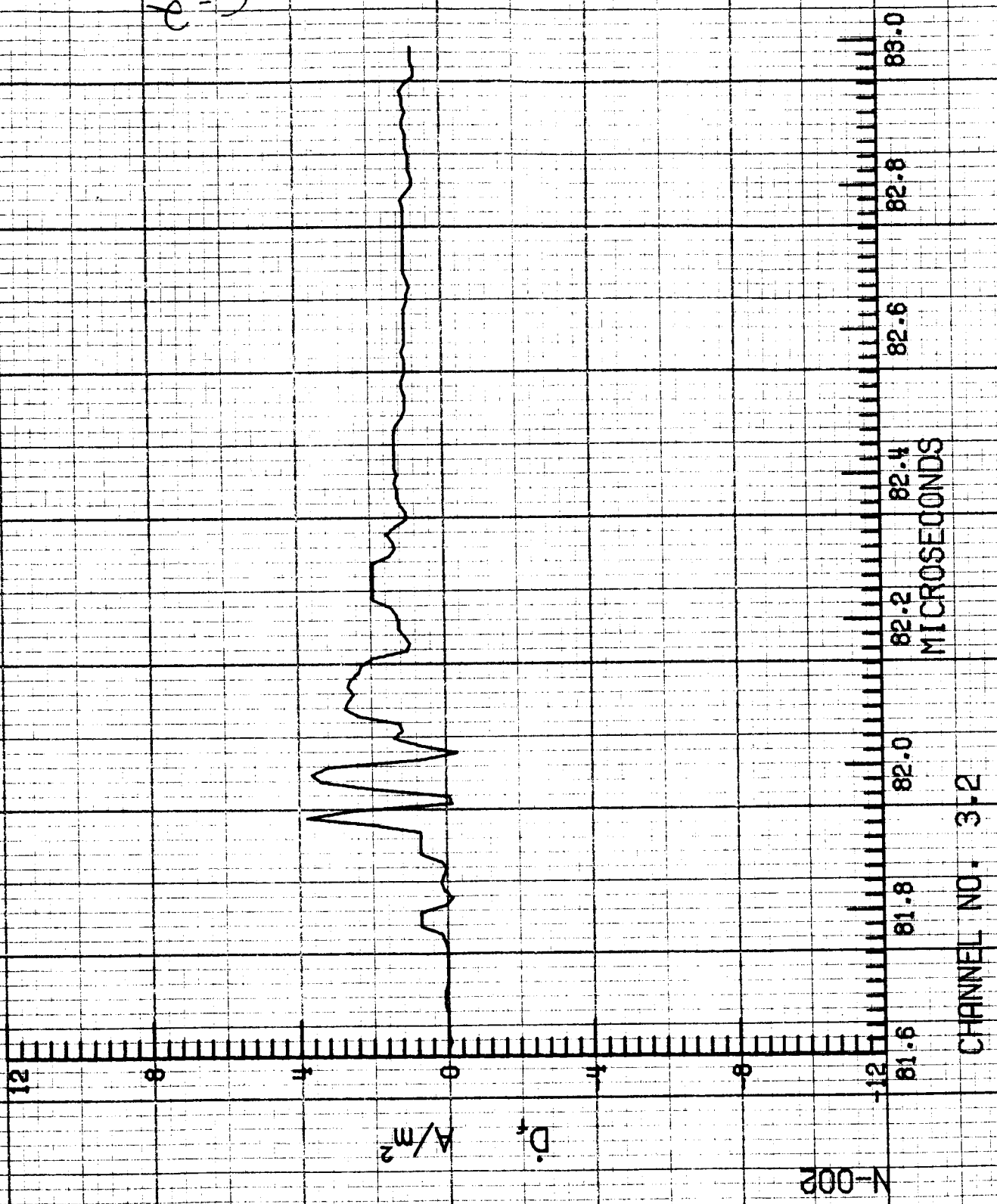


CHANNEL NO. 3.1

81.6 81.8 82.0 82.2 82.4 82.6 82.8 83.0
MICROSECONDS

975

ORIGINAL PAGE IS
OF POOR QUALITY



ORIGINAL PHOTO
OF POOR QUALITY

N-002

D_t A/m²

12

0

0

0

0

0

12

81.5

81.7

81.9

82.1

82.3

82.5

82.7

82.9

MICROSECONDS

CHANNEL NO. 4.1

937

N-002

 $\times 10^{10}$

A/s

24

16

8

0

8

16

24

81.5

81.7

81.9

82.1

82.3

82.5

82.7

82.9

MICROSECONDS

CHANNEL NO. 4.2

ORIGINAL PAGE IS
OF POOR QUALITY

N-002

$\times 10^5$

T/S

BU.

-4.0

616.5

616.7

616.9

617.1

617.3

617.5

617.7

617.9

MICROSECONDS

CHANNEL NO. 3.1

979

12

0

4

0

4

0

-12

616.5

616.7

616.9

617.1

617.3

617.5

617.7

617.9

 D_+
 A/m^2

MICROSECONDS

CHANNEL NO. 3.2

N-002

$\times 10^3$

4.8

3.2

1.6

0

1.6

3.2

4.8

T/s

B_w

ORIGINAL PAGE IS
OF POOR QUALITY

5-001

81.6

81.8

82.0

82.2

82.4

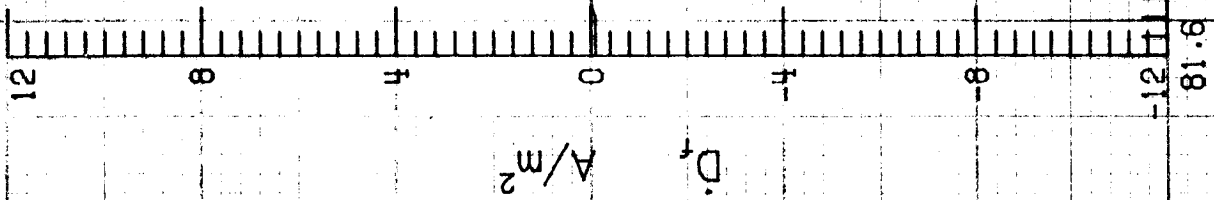
82.6

82.8

83.0

MICROSECONDS

CHANNEL NO. 3.1

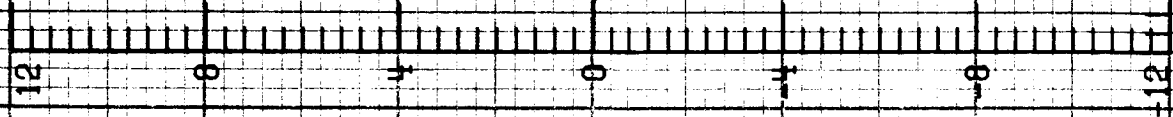


ORIGINAL PAGE IS
OF POOR QUALITY

MICROSECONDS

CHANNEL NO. 3.2

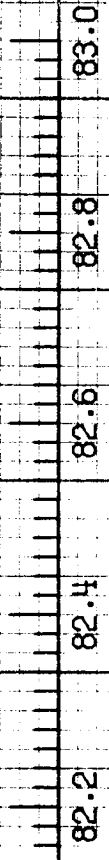
S-001



D_t A/m²

S-001

ORIGINAL PAGE IS
OF POOR QUALITY



MICROSECONDS

CHANNEL NO. 4.1

$\times 10^{10}$

24

16

8

0

-8

-16

-24

A/s

I.

5-001

81.6

81.8

82.0

82.2

82.4

82.6

82.8

83.0

MICROSECONDS

CHANNEL NO. 4.2

$\times 10^3$

4.8

3.2

1.6

0

-1.6

-3.2

-4.8

T/s

B_T

N-001

ORIGINAL PAGE IS
OF POOR QUALITY

81.7

81.9

82.1

82.3

82.5

82.7

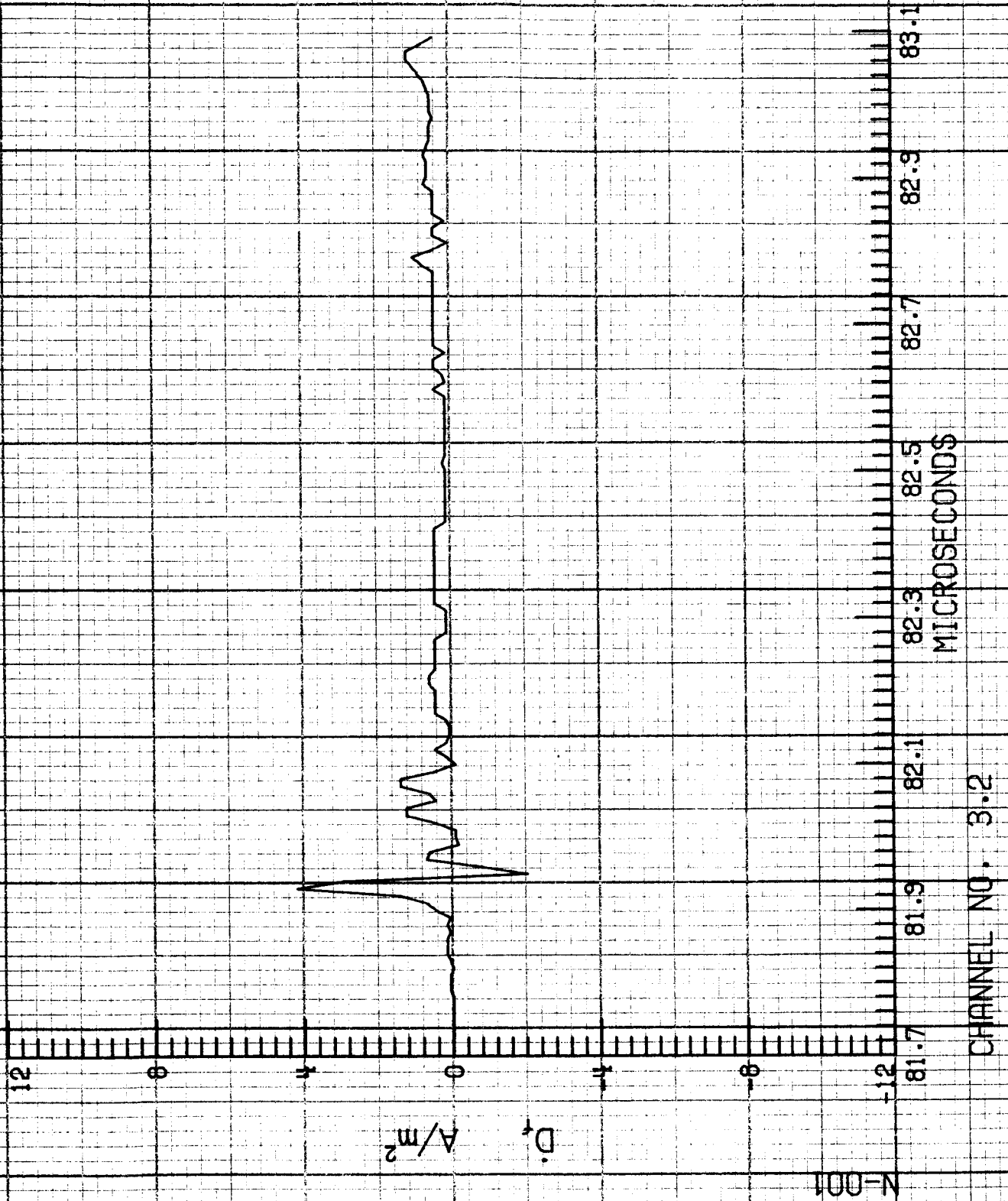
82.9

83.1

MICROSECONDS

CHANNEL NO. 3.1

586



$\times 10^3$

1.8

1.6

1.4

1.2

1.0

0.8

0.6

T/s

B_v

ORIGINAL PAGE IS
OF POOR QUALITY

5-002

81.7

81.9

82.1

82.3

82.5

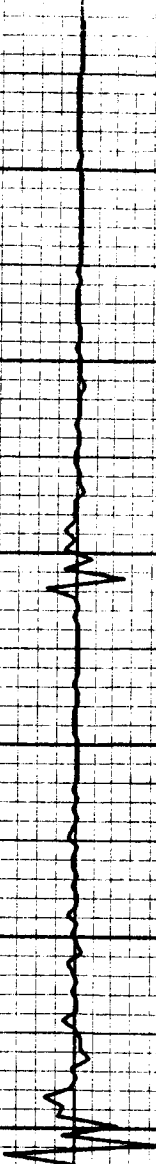
82.7

82.9

83.1

MICROSECONDS

CHANNEL NO. 3.1



12

0

+

A/m^2

D.

+

0

-12

81.7

81.9

82.1

82.3

82.5

82.7

82.9

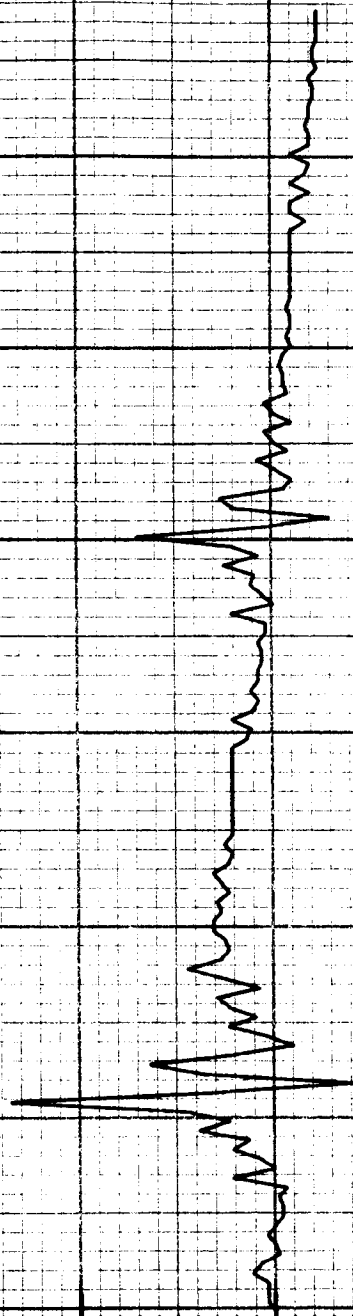
83.1

MICROSECONDS

CHANNEL NO. 3.2

S-002

886



5-002

D_t

A/m^2

586

81.3 81.5 81.7 81.9 82.1 82.3 82.5 82.7

MICROSECONDS

CHANNEL NO. 4.1

066

$\times 10^{10}$

24

16

8

0

-8

-16

-24

A/s

I.

5-002

81.3

81.5

81.7

81.9

82.1

82.3

82.5

82.7

MICROSECONDS

CHANNEL NO. 4.2

$\times 10^3$

4.8

3.2

1.6

0

1.6

3.2

4.8

81.7

81.9

82.1

82.3

82.5

82.7

82.9

83.1

T/s

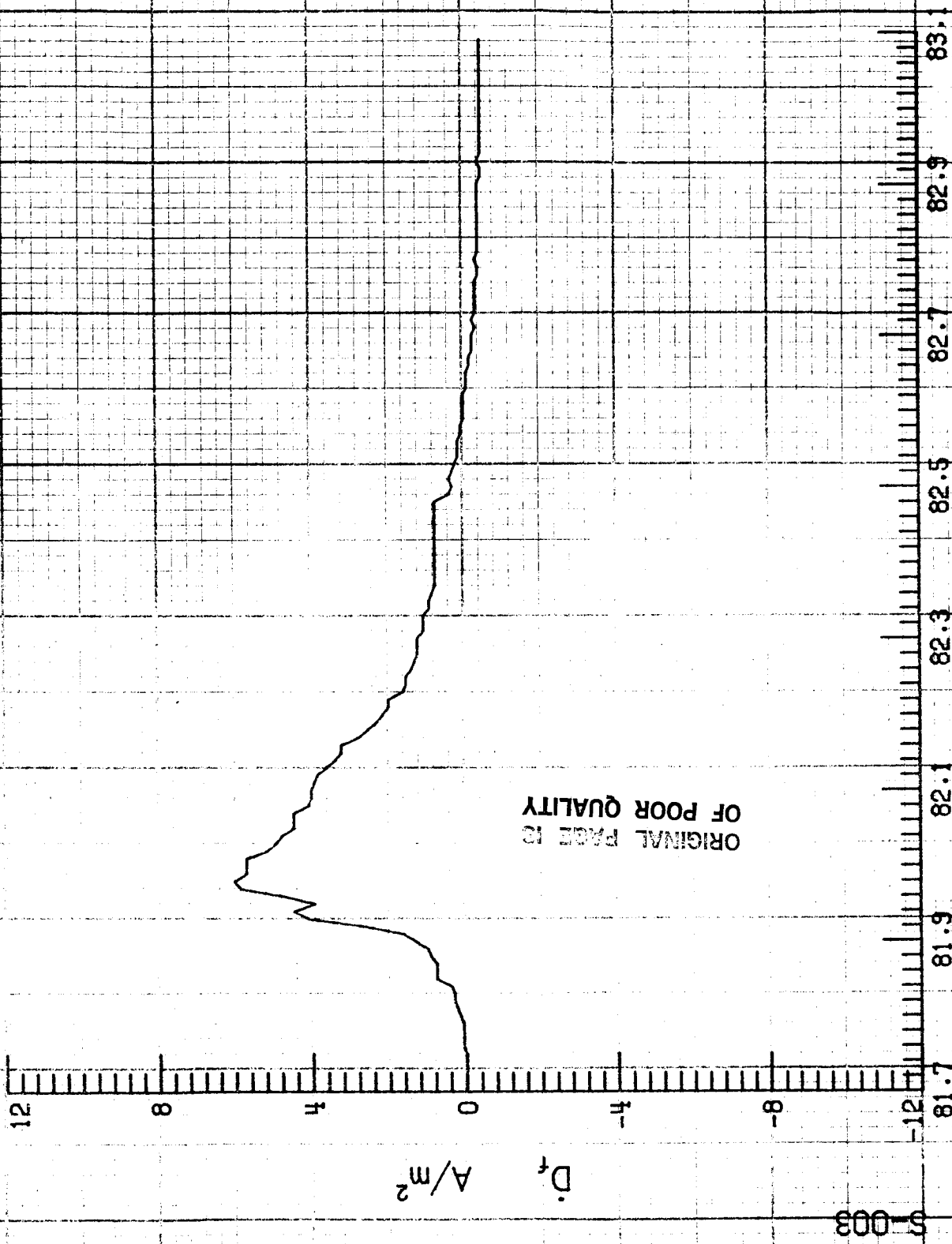
B_w

S-003

ORIGINAL PAGE IS
OF POOR QUALITY

MICROSECONDS

CHANNEL NO. 3.1



ORIGINAL PAGE IS
OF POOR QUALITY

5-008

12

0

0

0

0

0

12

D_t
 A/m^2

81.3

81.5

81.7

81.9

82.1

82.3

82.5

82.7

MICROSECONDS

CHANNEL NO. 4.1

566

$\times 10^{10}$

24

16

8

0

-8

-16

-24

A/s

I.

5-003

81.3

81.5

81.7

81.9

82.1

82.3

82.5

82.7

MICROSECONDS

CHANNEL NO. 4.2

$\times 10^3$

4.8

3.2

1.6

0

1.6

3.2

4.8

T/s

B_w

5 003

117.0

117.2

117.4

117.6

117.8

118.0

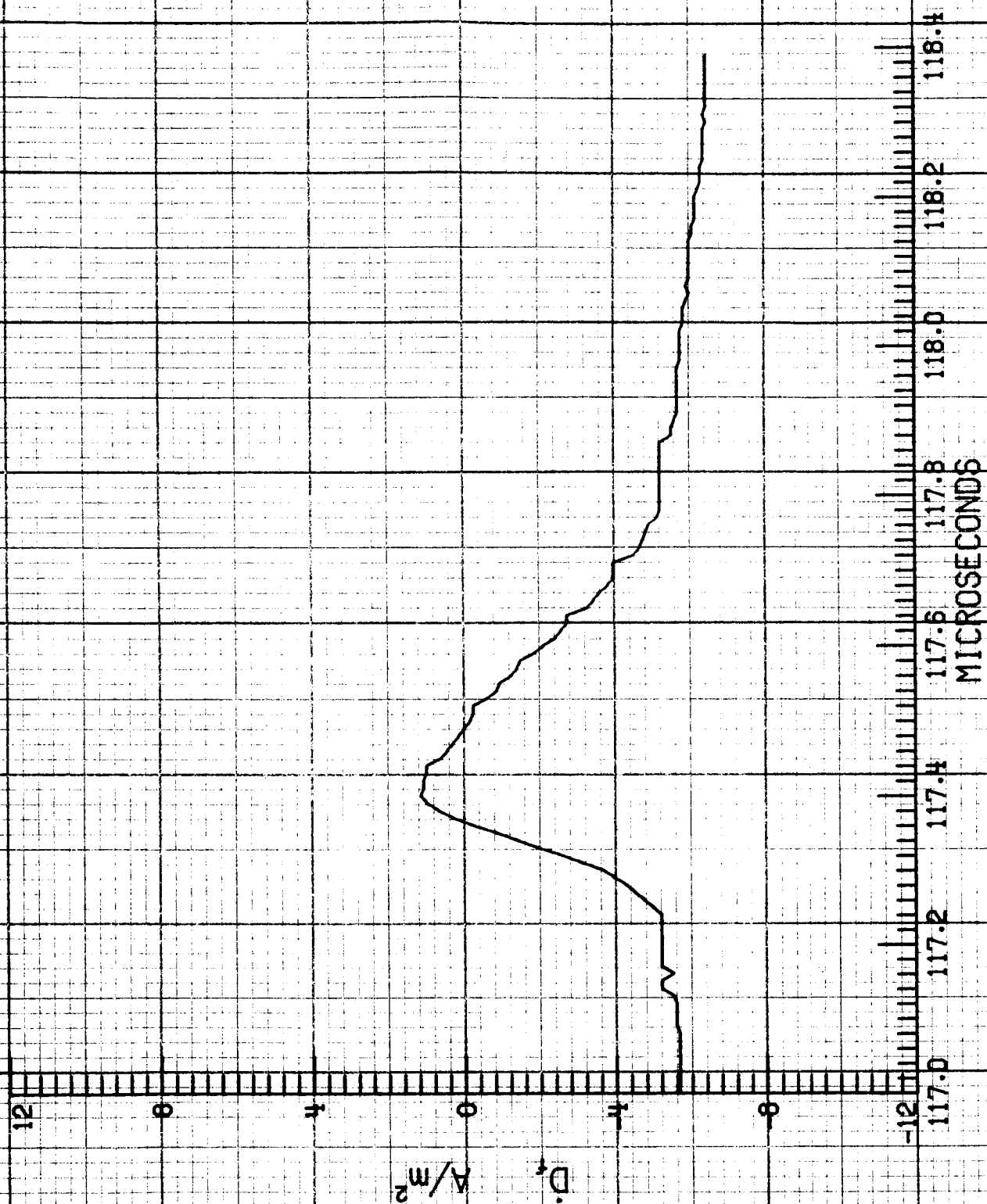
118.2

118.4

MICROSECONDS

CHANNEL NO. 3.1

566



CHANNEL NO. 3.2

ORIGINAL RECORDS
OF POOR QUALITY

$\times 10^3$

4.8

3.2

1.6

0

-1.6

-3.2

T/s

B_w

S 003

4.8

164.8

165.0

165.2

165.4

165.6

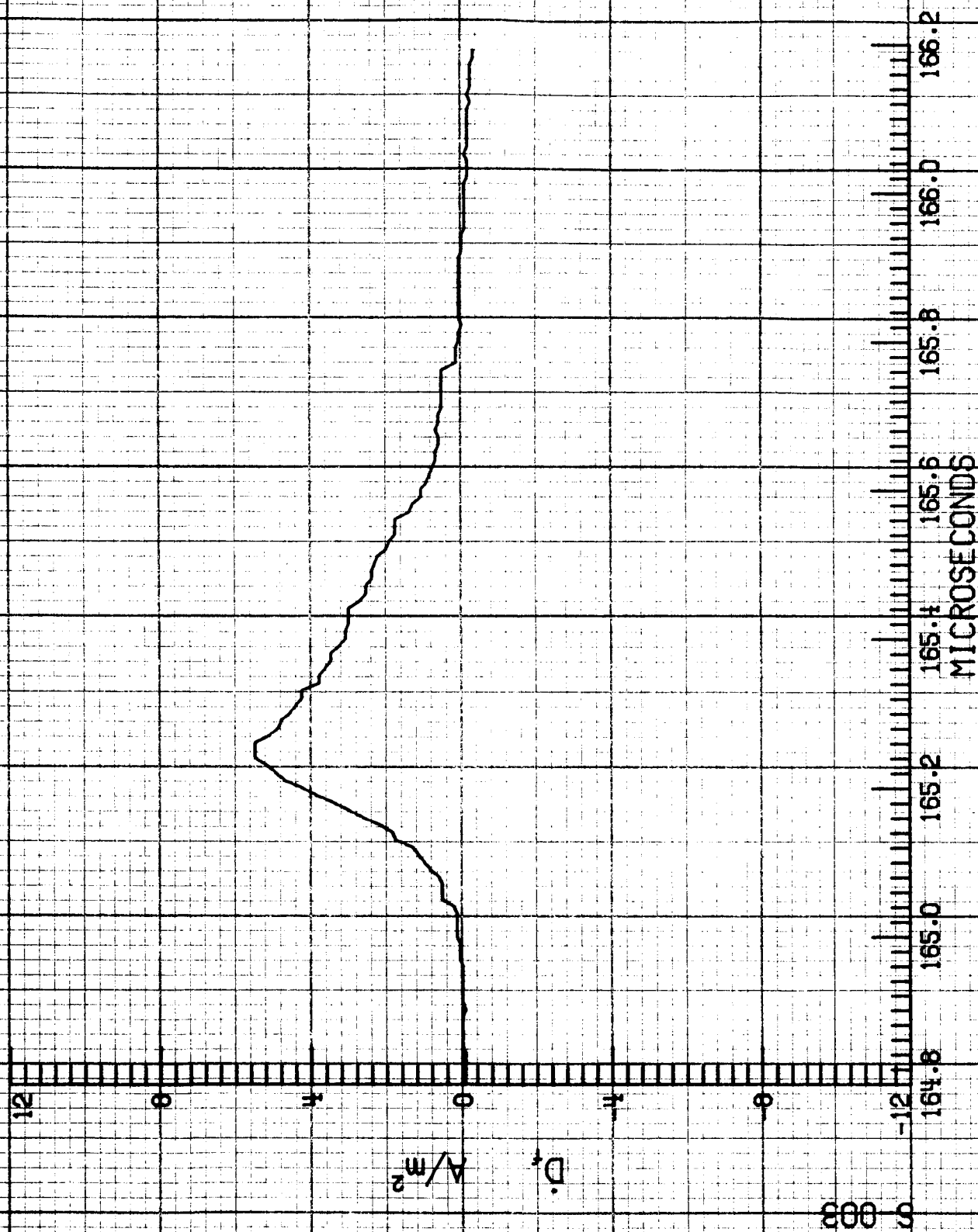
165.8

166.0

166.2

MICROSECONDS

CHANNEL NO. 3.1



CHANNEL NO. 3.2

$\times 10^3$

4.8

3.2

1.6

0

-1.6

-3.2

-4.8

T/s

m

800

614.5

614.7

614.9

615.1

615.3

615.5

615.7

615.9

MICROSECONDS

CHANNEL NO. 3.1

12

0

0

0

0

0

-12

614.5

614.7

614.9

615.1

615.3

615.5

615.7

615.9

MICROSECONDS

CHANNEL NO. 3.2

A/m^2

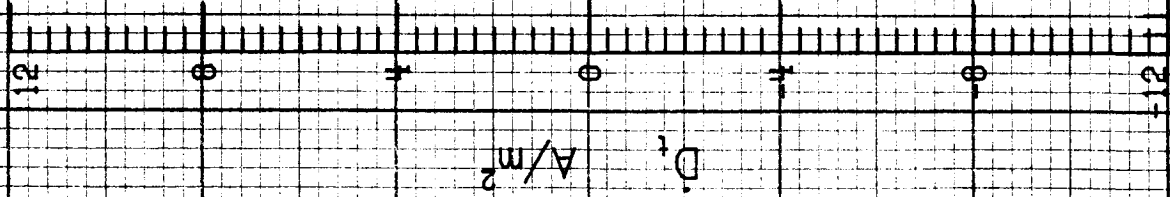
D.

0003

1000

ORIGINAL PAGE IS
OF POOR QUALITY

5-003



CHANNEL NO. 4.1

1001

$\times 10^{10}$

24

16

8

0

0

16

24

A/s

I.

5-008

ORIGINAL PAGE IS
OF POOR QUALITY

615.9

615.7

615.5

615.3

615.1

614.9

614.7

614.5

MICROSECONDS

CHANNEL NO. 4.2

ORIGINAL PAGE IS
OF POOR QUALITY

N-002

$\times 10^3$

I/s

B_v

4.8

4.4

4.0

3.6

3.2

2.8

2.4

2.0

1.6

1.2

0.8

0.4

0.0

-0.4

-0.8

-1.2

-1.6

-2.0

-2.4

-2.8

-3.2

-3.6

-4.0

-4.4

-4.8

-5.2

-5.6

-6.0

-6.4

-6.8

-7.2

-7.6

-8.0

-8.4

-8.8

-9.2

-9.6

-10.0

-10.4

-10.8

-11.2

-11.6

-12.0

-12.4

-12.8

-13.2

-13.6

-14.0

-14.4

-14.8

-15.2

-15.6

-16.0

-16.4

-16.8

-17.2

-17.6

-18.0

-18.4

-18.8

-19.2

-19.6

-20.0

-20.4

-20.8

-21.2

-21.6

-22.0

-22.4

-22.8

-23.2

-23.6

-24.0

-24.4

-24.8

-25.2

-25.6

-26.0

-26.4

-26.8

-27.2

-27.6

-28.0

-28.4

-28.8

-29.2

-29.6

-30.0

-30.4

-30.8

-31.2

-31.6

-32.0

-32.4

-32.8

-33.2

-33.6

-34.0

-34.4

-34.8

-35.2

-35.6

-36.0

-36.4

-36.8

-37.2

-37.6

-38.0

-38.4

-38.8

-39.2

-39.6

-40.0

-40.4

-40.8

-41.2

-41.6

-42.0

-42.4

-42.8

-43.2

-43.6

-44.0

-44.4

-44.8

-45.2

-45.6

-46.0

-46.4

-46.8

-47.2

-47.6

-48.0

-48.4

-48.8

-49.2

-49.6

-50.0

-50.4

-50.8

-51.2

-51.6

-52.0

-52.4

-52.8

-53.2

-53.6

-54.0

-54.4

-54.8

-55.2

-55.6

-56.0

-56.4

-56.8

-57.2

-57.6

-58.0

-58.4

-58.8

-59.2

-59.6

-60.0

-60.4

-60.8

-61.2

-61.6

-62.0

-62.4

-62.8

-63.2

-63.6

-64.0

-64.4

-64.8

-65.2

-65.6

-66.0

-66.4

-66.8

-67.2

-67.6

-68.0

-68.4

-68.8

-69.2

-69.6

-70.0

-70.4

-70.8

-71.2

-71.6

-72.0

-72.4

-72.8

-73.2

-73.6

-74.0

-74.4

-74.8

-75.2

-75.6

-76.0

-76.4

-76.8

-77.2

-77.6

-78.0

-78.4

-78.8

-79.2

-79.6

-80.0

-80.4

-80.8

-81.2

-81.6

-82.0

-82.4

-82.8

-83.2

-83.6

-84.0

-84.4

-84.8

-85.2

-85.6

-86.0

-86.4

-86.8

-87.2

-87.6

-88.0

-88.4

-88.8

-89.2

-89.6

-90.0

-90.4

-90.8

-91.2

-91.6

-92.0

-92.4

-92.8

-93.2

-93.6

-94.0

-94.4

-94.8

-95.2

-95.6

-96.0

-96.4

-96.8

-97.2

-97.6

-98.0

-98.4

-98.8

-99.2

-99.6

-100.0

-100.4

-100.8

-101.2

-101.6

-102.0

-102.4

-102.8

-103.2

-103.6

-104.0

-104.4

-104.8

-105.2

-105.6

-106.0

-106.4

-106.8

-107.2

-107.6

-108.0

-108.4

-108.8

-109.2

-109.6

-110.0

-110.4

-110.8

-111.2

-111.6

-112.0

-112.4

-112.8

-113.2

-113.6

-114.0

-114.4

-114.8

-115.2

-115.6

-116.0

-116.4

-116.8

-117.2

-117.6

-118.0

-118.4

-118.8

-119.2

-119.6

-120.0

-120.4

12

9

6

D₊
A/m²

3

0

-12

N-002

81.8

82.0

82.2

82.4

82.6

82.8

83.0

83.2

MICROSECONDS

CHANNEL NO. 3.2

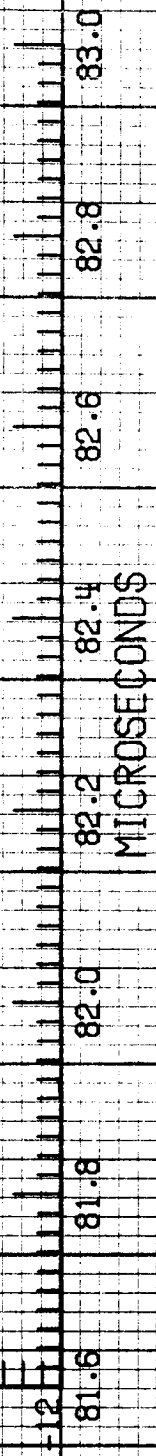
1004

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OF POOR QUALITY

ORIGINAL IMAGE
OF POOR QUALITY

N-002

D_t
 A/m^2



CHANNEL NO. 4.1

$\times 10^{10}$

24

16

8

A/s

I.

0

16

24

81.6

81.8

82.0

82.2

82.4

82.6

82.8

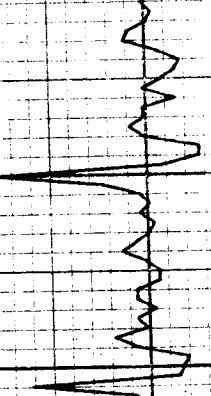
83.0

ORIGINAL PAGE IS
OF POOR QUALITY

MICROSECONDS

CHANNEL NO. 4.2

N-002



$\times 10^3$

4.8

3.2

1.6

0

-1.6

-3.2

-4.8

T/s

dB

#000

81.7

81.9

82.1

82.3

82.5

82.7

82.9

83.1

MICROSECONDS

CHANNEL NO. 3.1

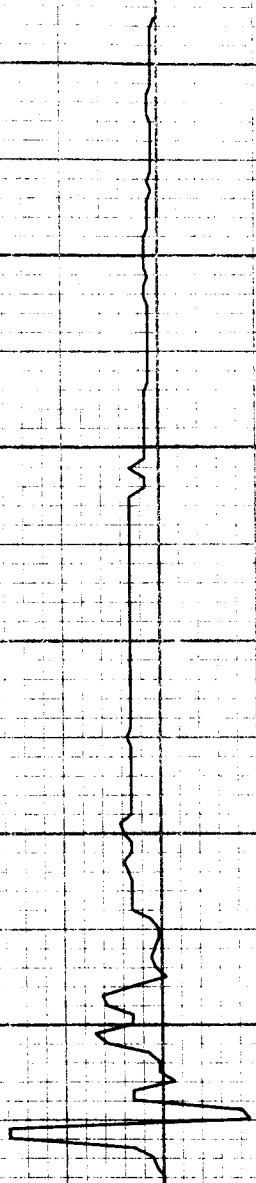
1007

12 0 4 8 12

D_t A/m²

S-004

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OF POOR QUALITY



81.7 81.9 82.1 82.3 82.5 82.7 82.9 83.1

MICROSECONDS

CHANNEL NO. 3.2

ORIGINAL PAGE IS
OF POOR QUALITY

N-003

CHANNEL NO. 11

MICROSECONDS

0.38

82.8

32.6

H. 23

2.2

0.2

1.8

1.6

6001

$$D_1 \quad A/m^2$$

$\times 10^{10}$

24

16

8

0

0

-16

-24

A/S

I

N-008

81.6

81.8

82.0

82.2

82.4

82.6

82.8

83.0

MICROSECONDS

CHANNEL NO. 4.2

1010

ORIGINAL PAGE IS
OF POOR QUALITY

N-004

CHANNEL NO. 3.1

MICROSECONDS

82.8

82.6

82.4

82.2

82.0

81.8

81.6

81.4

$\times 10^3$

4.8

3.2

1.6

0

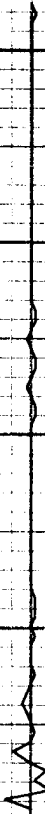
1.6

3.2

4.8

T/S

B.W.



12

0

+

0

+

0

12

81.4

81.6

81.8

82.0

82.2

82.4

82.6

82.8

D_r
 A/m^2

N-004

MICROSECONDS

CHANNEL NO. 3.2

1012

$\times 10^5$

4.8

3.2

1.6

0

-1.6

-3.2

-4.8

I/s

ED_{vr}

5-005

AREA

1013

81.5

81.7

81.9

82.1

82.3

82.5

82.7

82.9

MICROSECONDS

CHANNEL NO. 3.1

12

0

+

0

+

0

12

81.5

81.7

81.9

82.1

82.3

82.5

82.7

82.9

$D, A/m^2$

B-005

ORIGINAL PAGE IS
OF POOR QUALITY

MICROSECONDS

CHANNEL NO. 3.2

1014

ORIGINAL PAGE IS
OF POOR QUALITY

S-005

D_t
 A/m^2

12 10 8 6 4 2 0 -2 -4 -6 -8 -10 -12

81.5

81.7

81.9

82.1

82.3

82.5

82.7

82.9

MICROSECONDS

CHANNEL NO. 4.1

$\times 10^{10}$

24

16

8

0

0

16

24

81.5

81.7

81.9

82.1

82.3

82.5

82.7

82.9

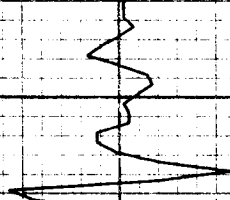
A/s

I.

5-005

MICROSECONDS

CHANNEL NO. 4.2



1017

$\times 10^3$

T/S

B_v

N-005

81.8

82.0

82.2

82.4

82.6

82.8

83.0

83.2

MICROSECONDS

CHANNEL NO. 3.1

12

0

4

0

4

0

12

0

CHANNEL NO. 3.2

D_r
 A/m^2

N-005

MICROSECONDS

81.8

82.0

82.2

82.4

82.6

82.8

83.0

83.2

1018



A/m^2

D_t

N-005

ORIGINAL PAGE IS
OF POOR QUALITY

82.8

82.6

82.4

82.2

82.0

81.8

81.6

81.4

MICROSECONDS

CHANNEL NO. 4-1

$\times 10^{10}$

24

16

8

A/s

I

8

16

24

N-005

81.4

81.6

81.8

82.0

82.2

82.4

82.6

82.8

MICROSECONDS

CHANNEL NO. 4.2



ORIGINAL PAGE IS
OF POOR QUALITY

$\times 10^3$

T/s

W_r

S-001

83.0

82.8

82.6

82.4

82.2

82.0

81.8

81.6

MICROSECONDS

CHANNEL NO. 3.1

1021

12

0

+

D_r
 A/m^2

0

+

0

5-001

81.6

81.8

82.0

82.2

82.4

82.6

82.8

83.0

MICROSECONDS

CHANNEL NO. 3.2

1022

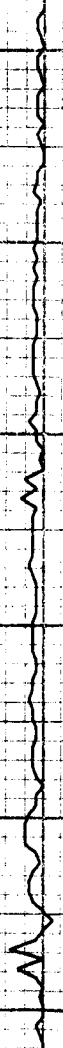
S-001

D_t
 A/m^2

81.6 81.8 82.0 82.2 82.4 82.6 82.8 83.0

MICROSECONDS

CHANNEL NO. 4.1



1023

$\times 10^{10}$

24

16

8

0

0

16

24

A/s

I

3-001

81.6

81.8

82.0

82.2

82.4

82.6

82.8

83.0

MICROSECONDS

CHANNEL NO. 4.2

1024

ORIGINAL PAGE IS
OF POOR QUALITY

N-001

$\frac{dB}{dT}$

$\times 10^3$

MICROSECONDS

CHANNEL NO. 3.1

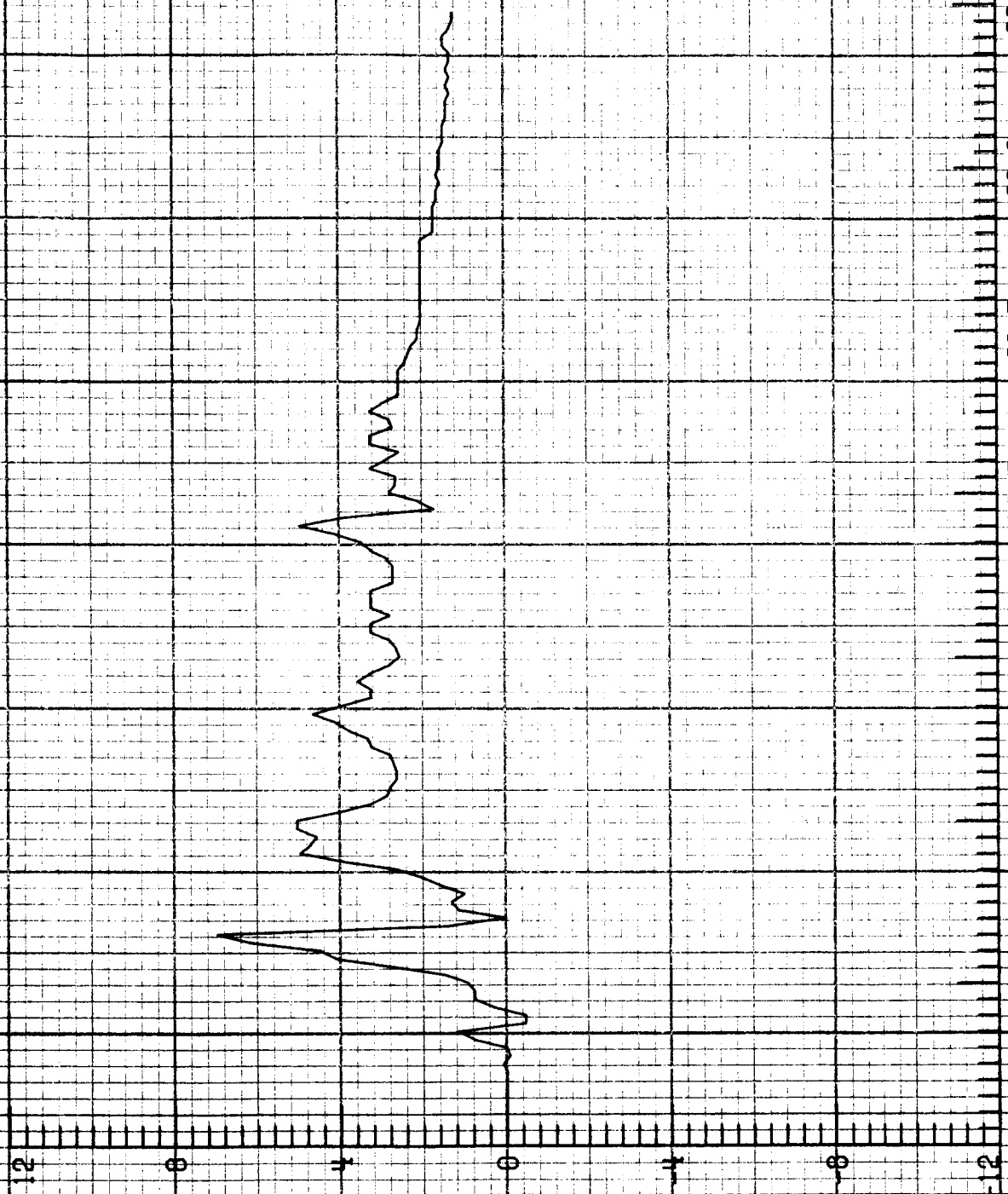
1025

N-001
D_r
A/m²

81.7 81.9 82.1 82.3 82.5 82.7 82.9 83.1
MICROSECONDS

CHANNEL NO. 3.2

1026



ORIGINAL PAGE IS
OF POOR QUALITY

N-001

D_t A/m²

MICROSECONDS

CHANNEL NO. 4.1

82.9

82.7

82.5

82.3

82.1

81.9

81.7

81.5

1027

$\times 10^{10}$

24

16

8

0

0

16

24

A/s

I.

N-001

81.5

81.7

81.9

82.1

82.3

82.5

82.7

82.9

MICROSECONDS

CHANNEL NO. 4.2

$\times 10^3$

4.8

3.2

1.6

0

1.6

3.2

4.8

T/S

B_{WT}

100

81.2

81.4

81.6

81.8

82.0

82.2

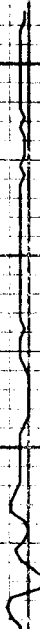
82.4

82.6

MICROSECONDS

CHANNEL NO. 3.1

ORIGINAL PAGE IS
OF POOR QUALITY



12

0

+

0

+

0

-12

81.2

81.4

81.6

81.8

82.0

82.2

82.4

82.6

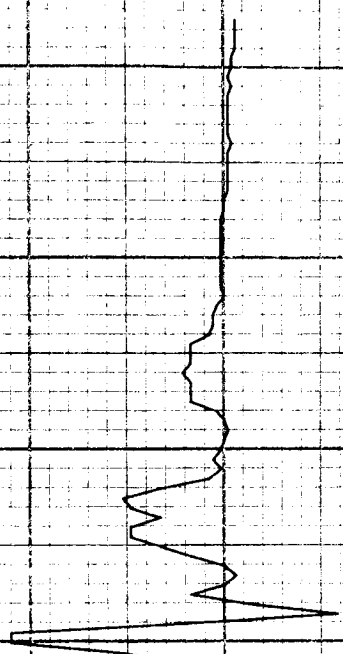
D_r
 A/m^2

5-004

MICROSECONDS

CHANNEL NO. 3.2

1030



12

0

+

0

+

0

-12

A/m^2

D_t

5-004

81.0

81.2

81.4

81.6

81.8

82.0

82.2

82.4

MICROSECONDS

CHANNEL NO. 4.1

1031

$\times 10^{10}$

24

16

8

0

8

16

24

81.0

81.2

81.4

81.6

81.8

82.0

82.2

82.4

A/s

I.

F00-9

CHANNEL NO. 4.2

MICROSECONDS

ORIGINAL PAGE IS
OF POOR QUALITY

TEST NO. 83-04

F106 LIGHTNING/TK.4/M. THOMAS

5-006

$\times 10^3$

I/s
 B_{WT}

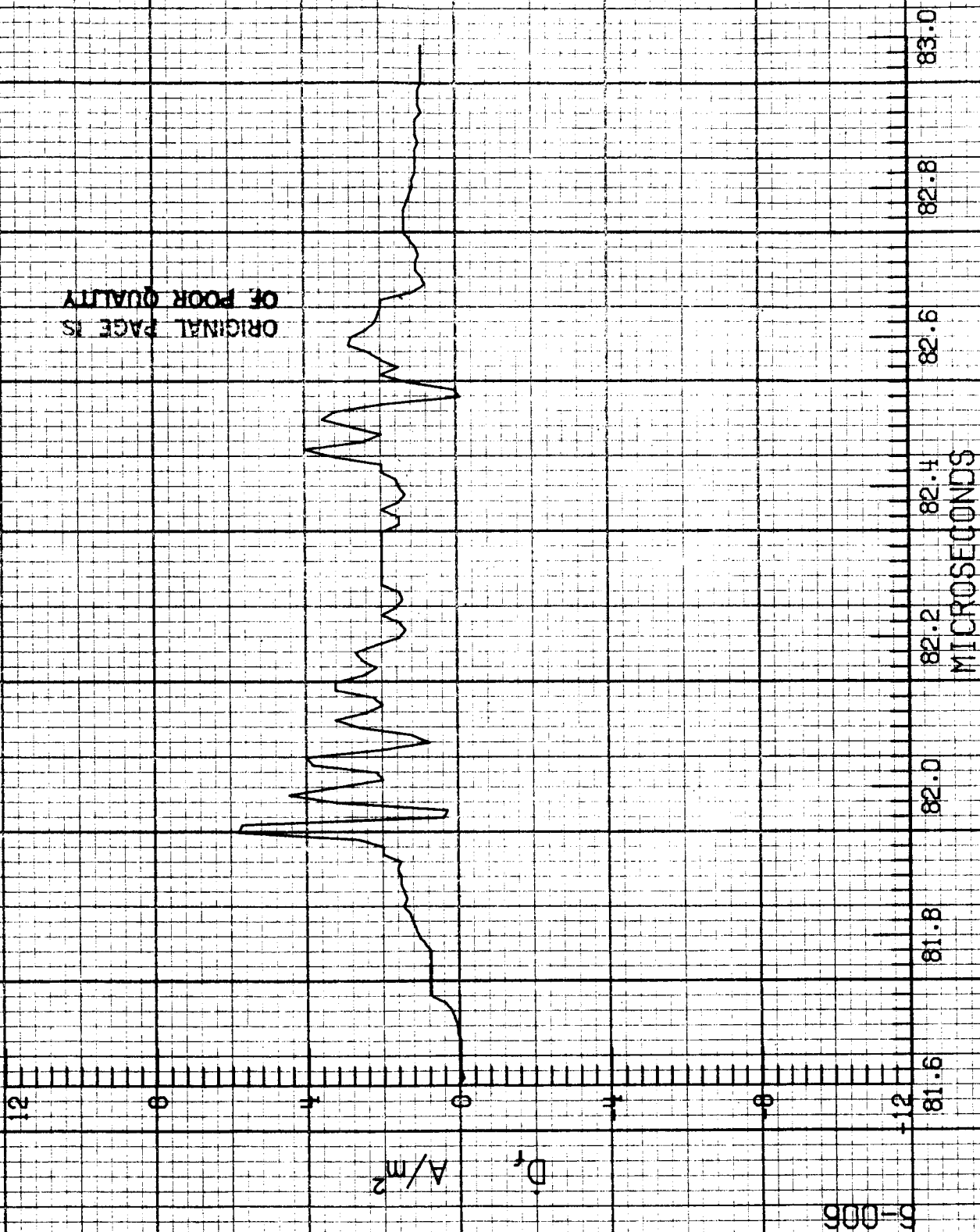
4.8
3.2
1.6
0
-1.6
-3.2

81.6
81.8
82.0
82.2
82.4
82.6
82.8
83.0

MICROSECONDS

CHANNEL NO. 3.1

1093



12

0

4

0

4

0

12

81.6

81.8

82.0

82.2

82.4

82.6

82.8

83.0

D_t
 A/m^2

0.006

MICROSECONDS

CHANNEL NO. 4.1

1085

$\times 10^{10}$

24

16

8

0

8

16

24

A/s

1.1

5-006

ORIGINAL PAGE IS
OF POOR QUALITY

1036

83.0

82.8

82.6

82.4

82.2

82.0

81.8

81.6

MICROSECONDS

CHANNEL NO. 4.2

12

0

+

0

+

0

-12

81.6

81.8

82.0

82.2

82.4

82.6

82.8

83.0

D_r
 A/m^2

S-008

MICROSECONDS

CHANNEL NO. 3.2

1037

12 0 0 0 12

D_t
 A/m^2

0-008

81.6

81.8

82.0

82.2

82.4

82.6

82.8

83.0

MICROSECONDS

CHANNEL NO. 4.1

1088

ORIGINAL PAGE IS
OF POOR QUALITY

5-008

$\times 10^{10}$

24

16

8

A/s

I.

8

16

24

81.6

81.8

82.0

82.2

82.4

82.6

82.8

83.0

MICROSECONDS

CHANNEL NO. 4.2

$\times 10^3$

4.8

3.2

1.6

T/S

B_{WT}

1.6

3.2

4.8

223.2

223.4

223.6

223.8

224.0

224.2

224.4

224.6

MICROSECONDS

CHANNEL NO. 3.1

S-008

ORIGINAL PAGE IS
OF POOR QUALITY

1040

١٧٠١

221.6

Fi: Fi22

22.2

0.722

D. 625

9.3.8

234

223.2

MICROSECONDS

CHANNEL NO. 3.2


$$D, A/m^2$$

CHANNEL NO. 3.2

TEST NO. 83-044

F106 LIGHTNING/TK.3/M.THOMAS

S-001

D_t
 A/m^2

12 9 6 3 0

ORIGINAL PAGE IS
OF POOR QUALITY

1042

81.7 81.9 82.1 82.3 82.5 82.7 82.9 83.1

MICROSECONDS

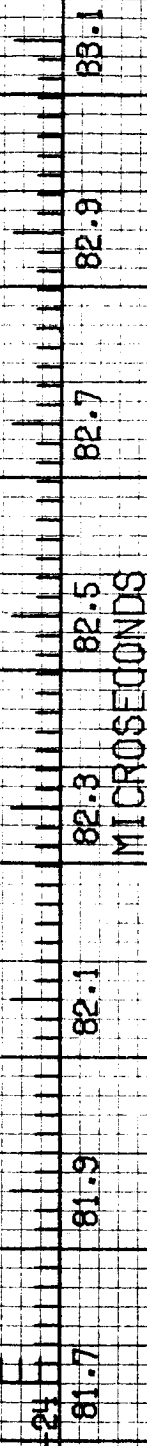
CHANNEL NO. 2.0

ORIGINAL PAGE IS
OF POOR QUALITY

$\times 10^{10}$

A/S

S-001



CHANNEL NO. 2.1

1044

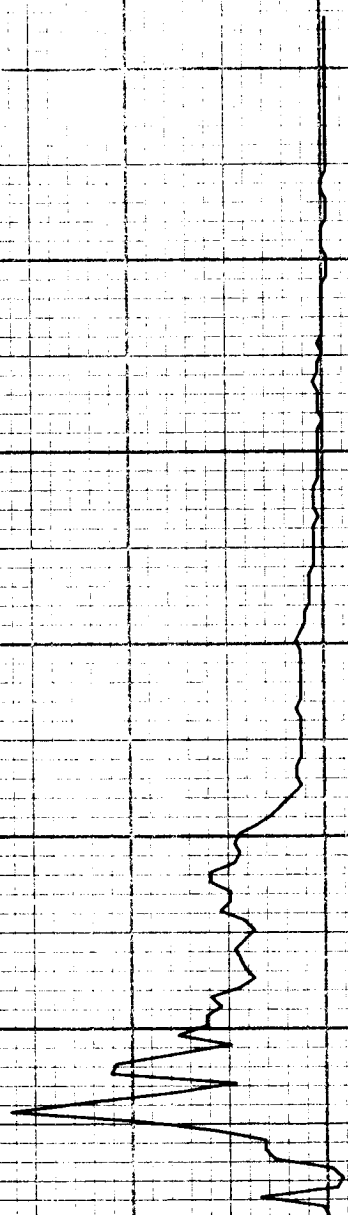
D_w
 A/m^2

0.001

81.7 81.9 82.1 82.3 82.5 82.7 82.9 83.1

MICROSECONDS

CHANNEL NO. 3.1



ORIGINAL PAGE IS
OF POOR QUALITY

12

0

+

A/m^2

D_r

+

0

12

81.7

81.9

82.1

82.3

82.5

82.7

82.9

83.1

MICROSECONDS

CHANNEL NO. 3.2

S-001

1045

TEST NO. 83-04

F106 LIGHTNING/TK.S/M.THOMAS

S-001

B_w
T/s

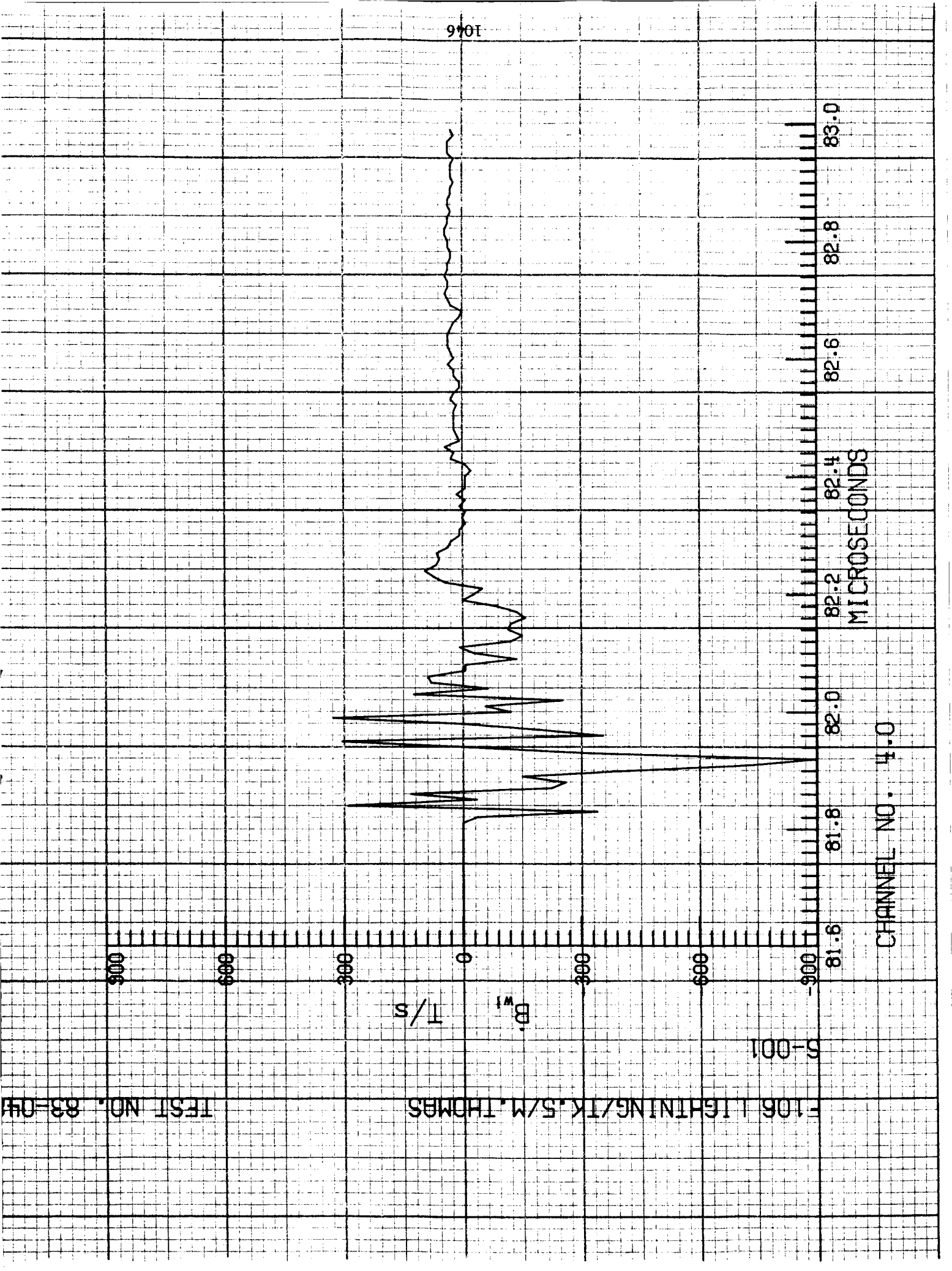
300 600 300 0 300 600 900

81.6 81.8 82.0 82.2 82.4 82.6 82.8 83.0

MICROSECONDS

CHANNEL NO. 14.0

1046



ORIGINAL PAGE IS
OF POOR QUALITY

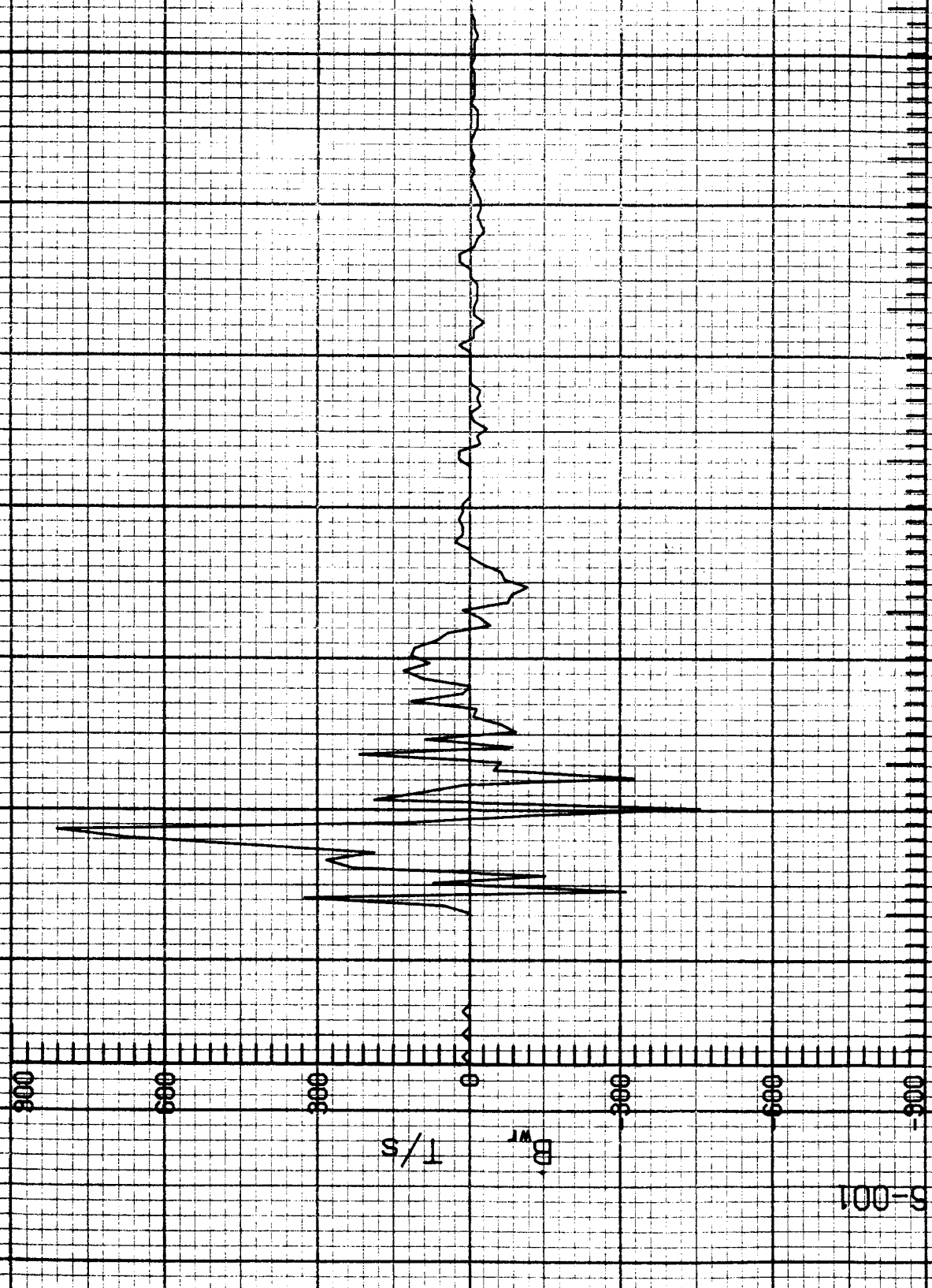
3-001
B_{WT}
T/s

MICROSECONDS

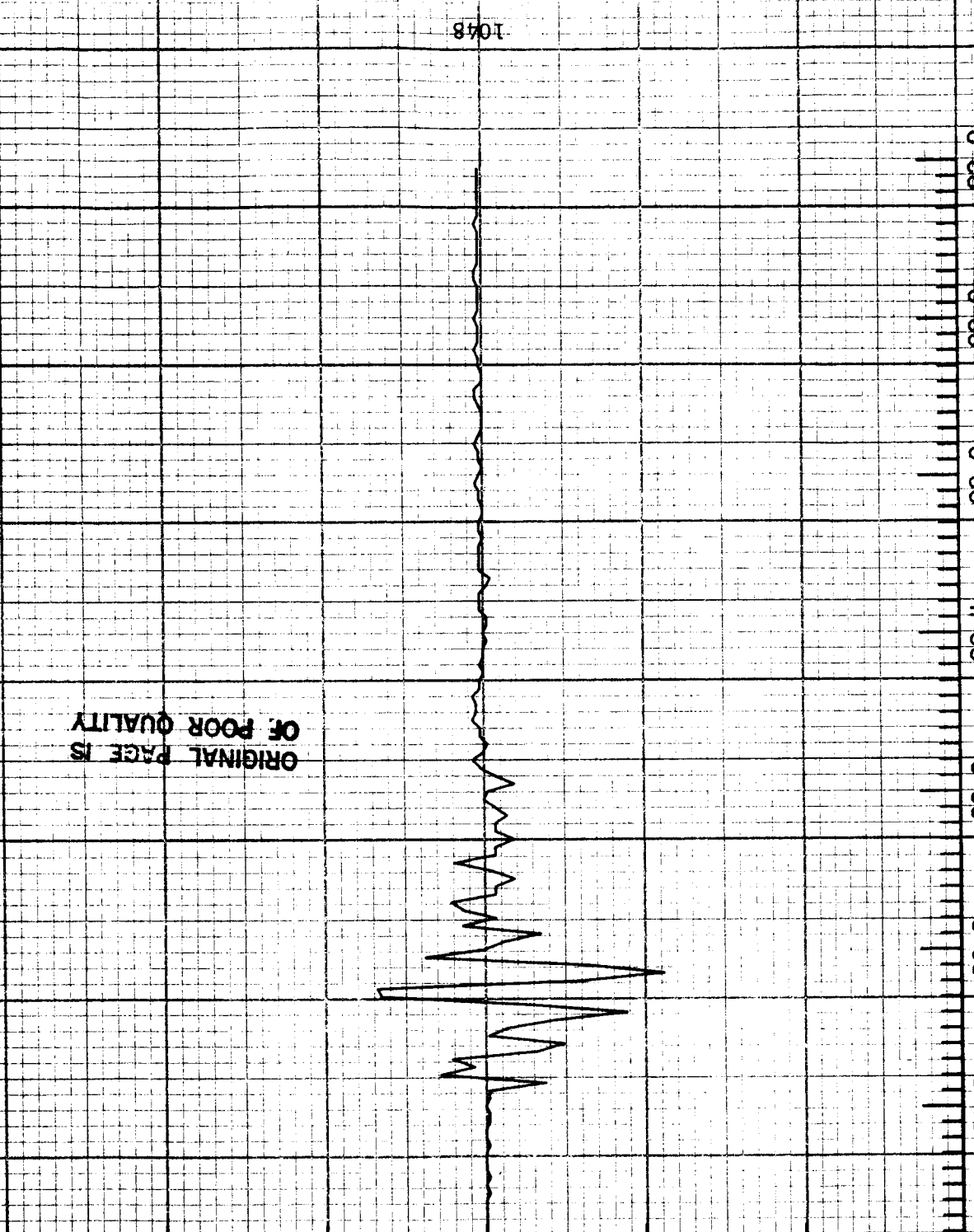
CHANNEL NO. 4.1

81.6 81.8 82.0 82.2 82.4 82.6 82.8 83.0

1047



S-001
B_t
T/s



ORIGINAL PAGE IS
OF POOR QUALITY

1048

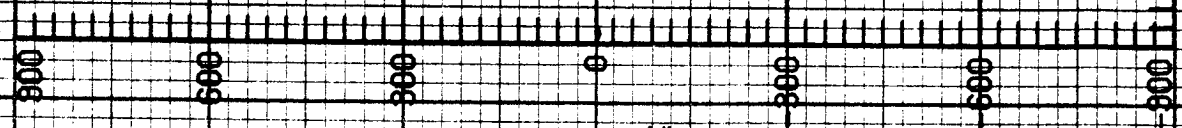
CHANNEL NO. 4.2

TEST NO. 83-048

ORIGINAL PAGE IS
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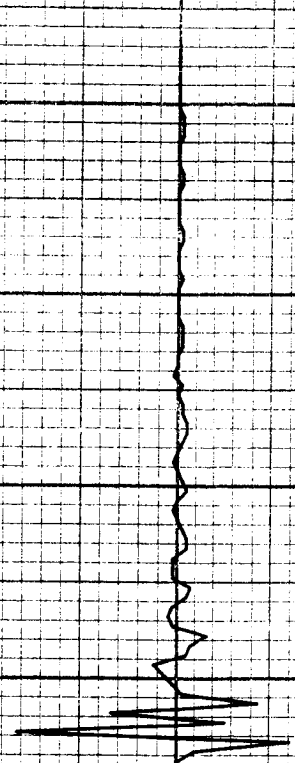
F106 LIGHTNING/TK.S/M.THOMAS

S-003



T/S
B_w

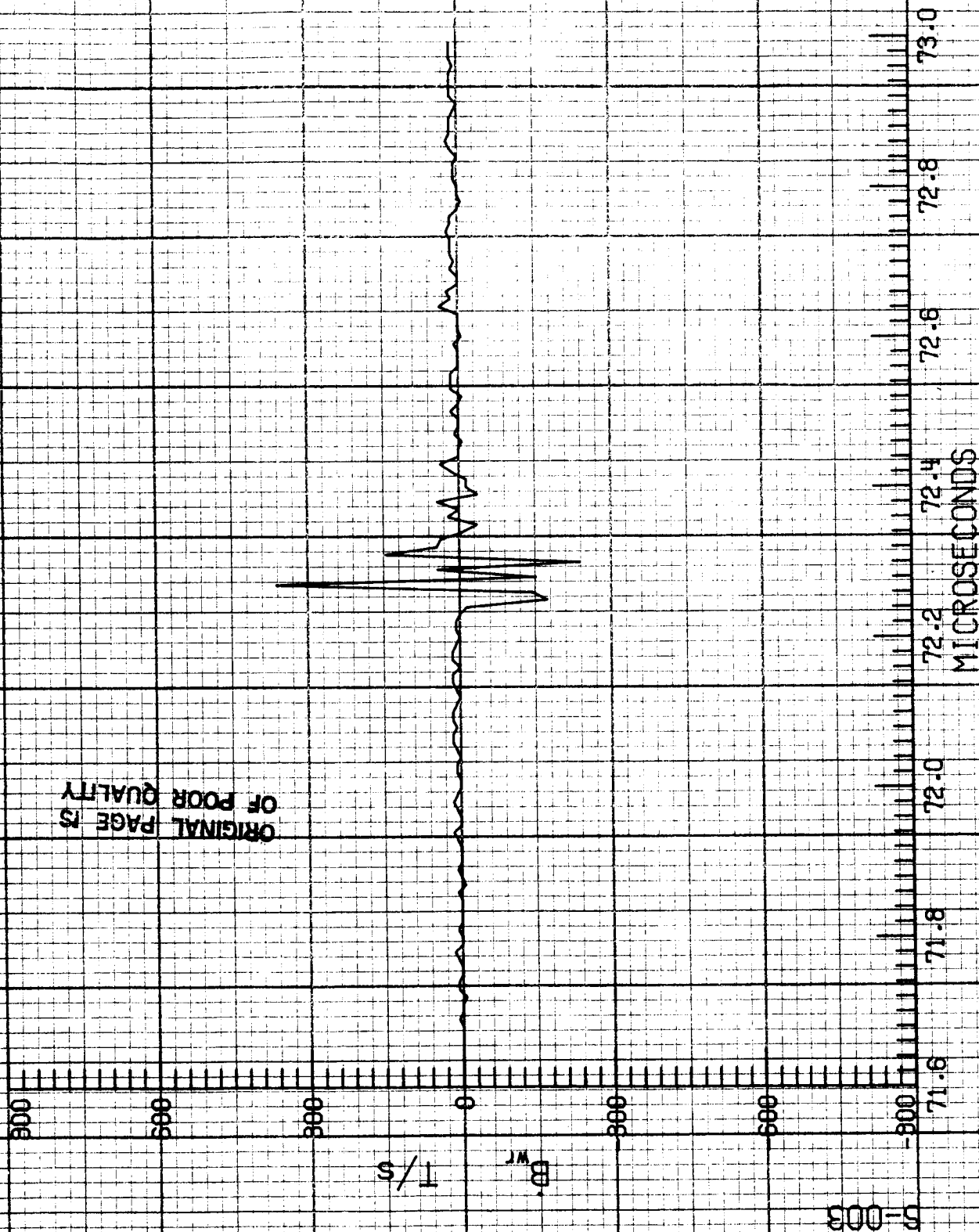
650T



71.6 71.8 72.0 72.2 72.4 72.6 72.8 73.0

MICROSECONDS

CHANNEL NO. 4.0



CHANNEL NO. 4-1

D-003

ORIGINAL PAGE IS
OF POOR QUALITY

5-003
B_t
T/s

0

1051

71.6 71.8 72.0 72.2 72.4 72.6 72.8 73.0
MICROSECONDS

CHANNEL NO. 4.2



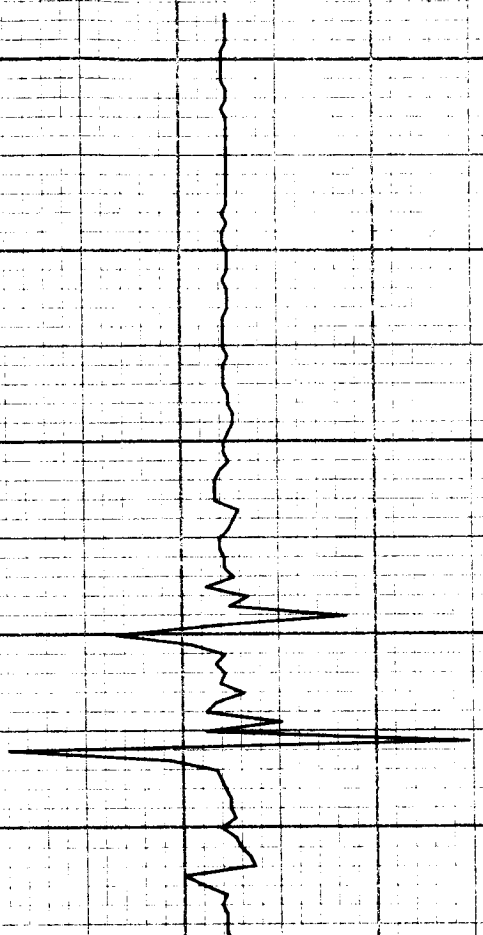
5-008
T/s
B_w
0
300
600
900

78.6 78.8 79.0 79.2 79.4 79.6 79.8 80.0

MICROSECONDS

CHANNEL NO. 4.0

1052



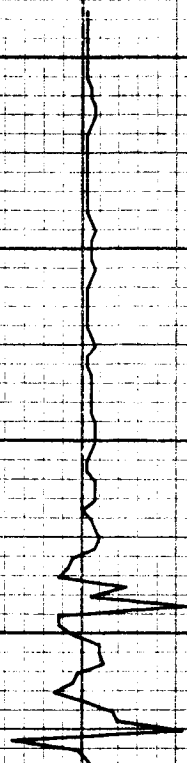
ORIGINAL PAGE IS
OF POOR QUALITY

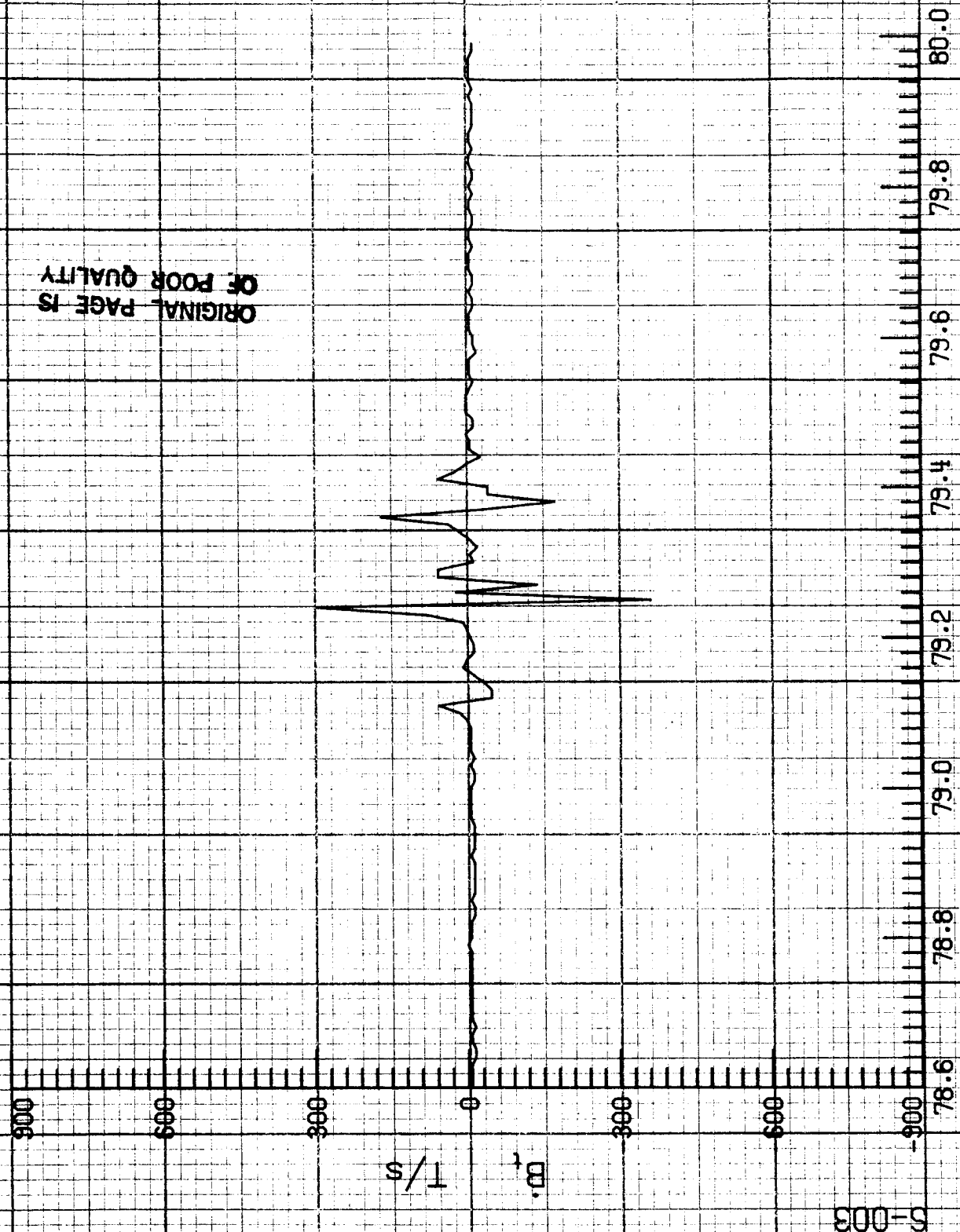
5-003
BD.
T/S

1053

78.6 78.8 79.0 79.2 79.4 79.6 79.8 80.0
MICROSECONDS

CHANNEL NO. 4.1





ORIGINAL PAGE IS
OF POOR QUALITY

1054

S-003

CHANNEL NO. 4.2

ORIGINAL PAGE IS
OF POOR QUALITY

18
16
14
12
10
8
6
4
2
0
-2
-4
-6
-8
-10
-12
-14
-16
-18

D_w
 A/m^2

N-001

81.7

81.9

82.1

82.3

82.5

82.7

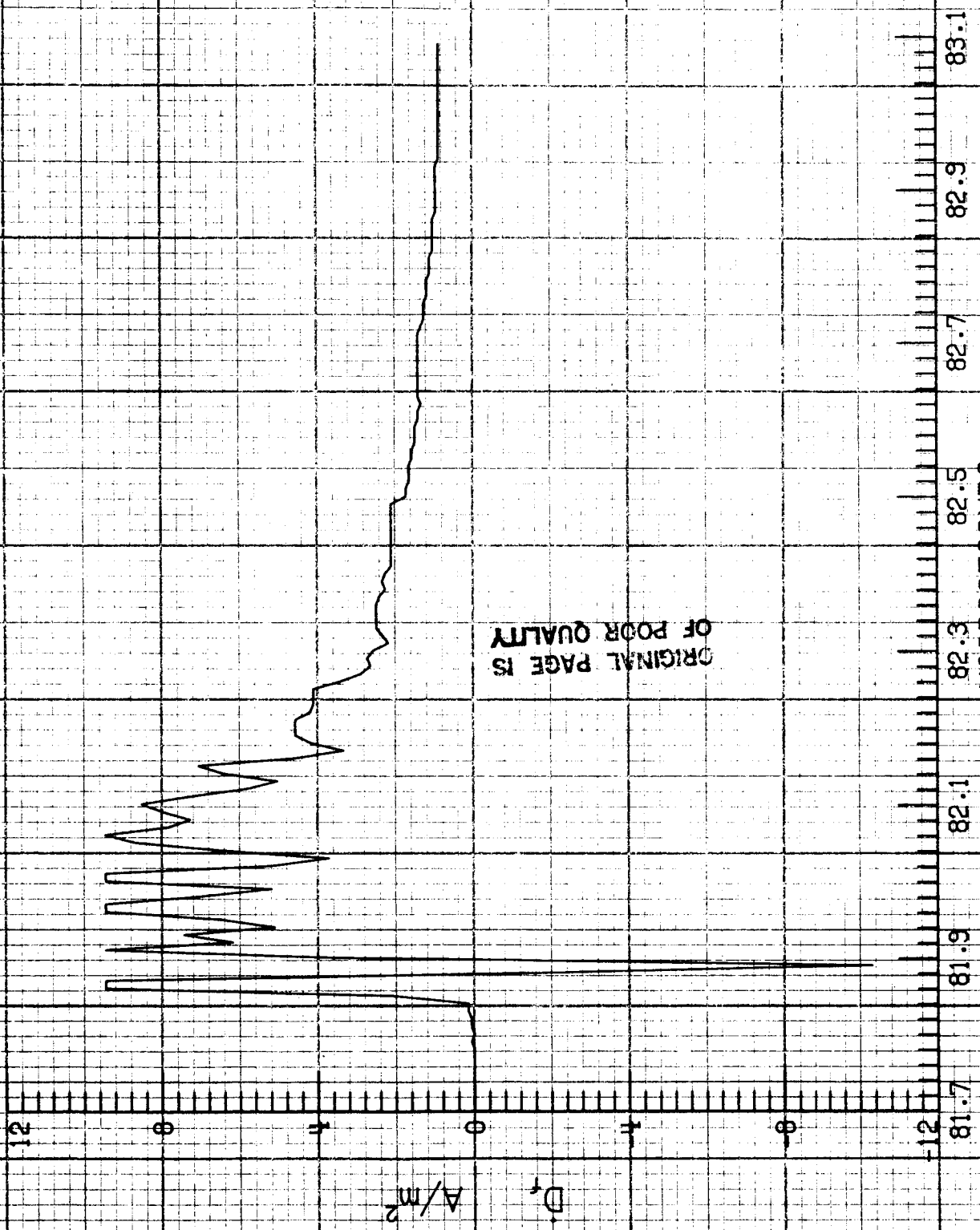
82.9

83.1

MICROSECONDS

CHANNEL NO. 3.1

1055



ORIGINAL PAGE IS
OF POOR QUALITY

N-001

CHANNEL NO. 3.2

ORIGINAL PAGE IS
OF POOR QUALITY

N-001

T/s
 B_{w1}

900
600
300
0
300
600
900

81.4 81.6 81.8 82.0 82.2 82.4 82.6 82.8

MICROSECONDS

CHANNEL NO. 4.0

900

600

300

I/s

B_{WT}

300

600

N-001

81.4

81.6

81.8

82.0

82.2

82.4

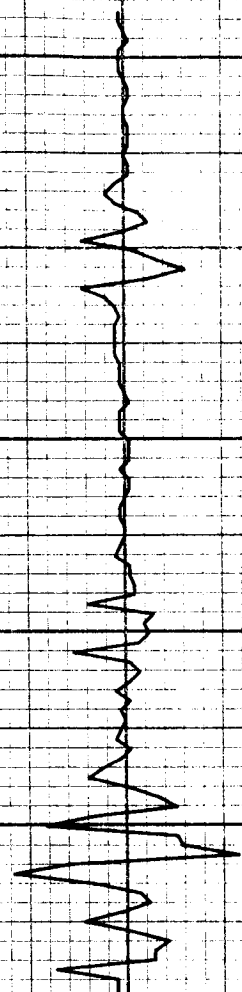
82.6

82.8

MICROSECONDS

CHANNEL NO. 4.1

1058



ORIGINAL PAGE IS
OF POOR QUALITY

N-001

B_t
T/s



81.4

81.6

81.8

82.0

82.2

82.4

82.6

82.8

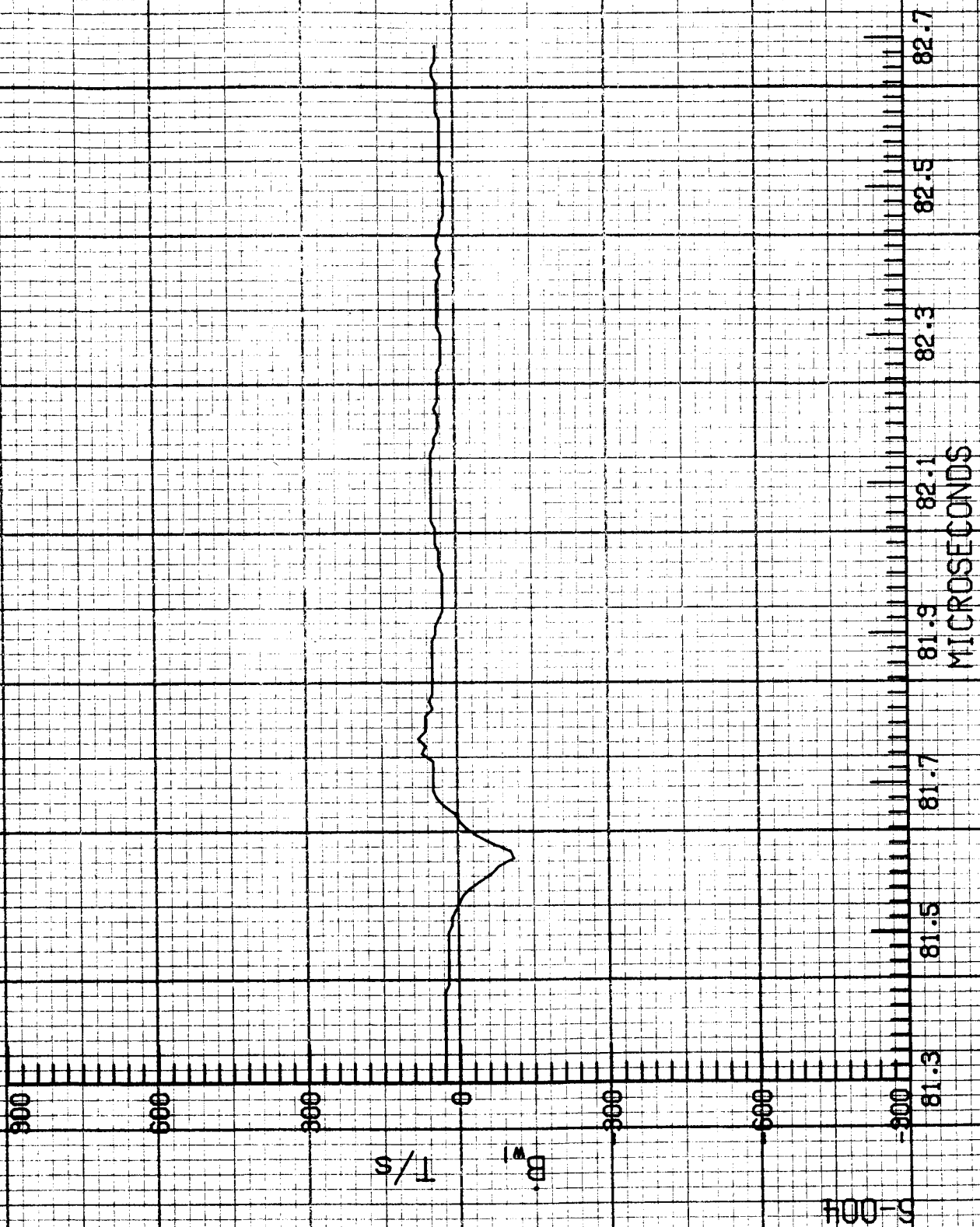
MICROSECONDS

CHANNEL NO. 4.2

1059

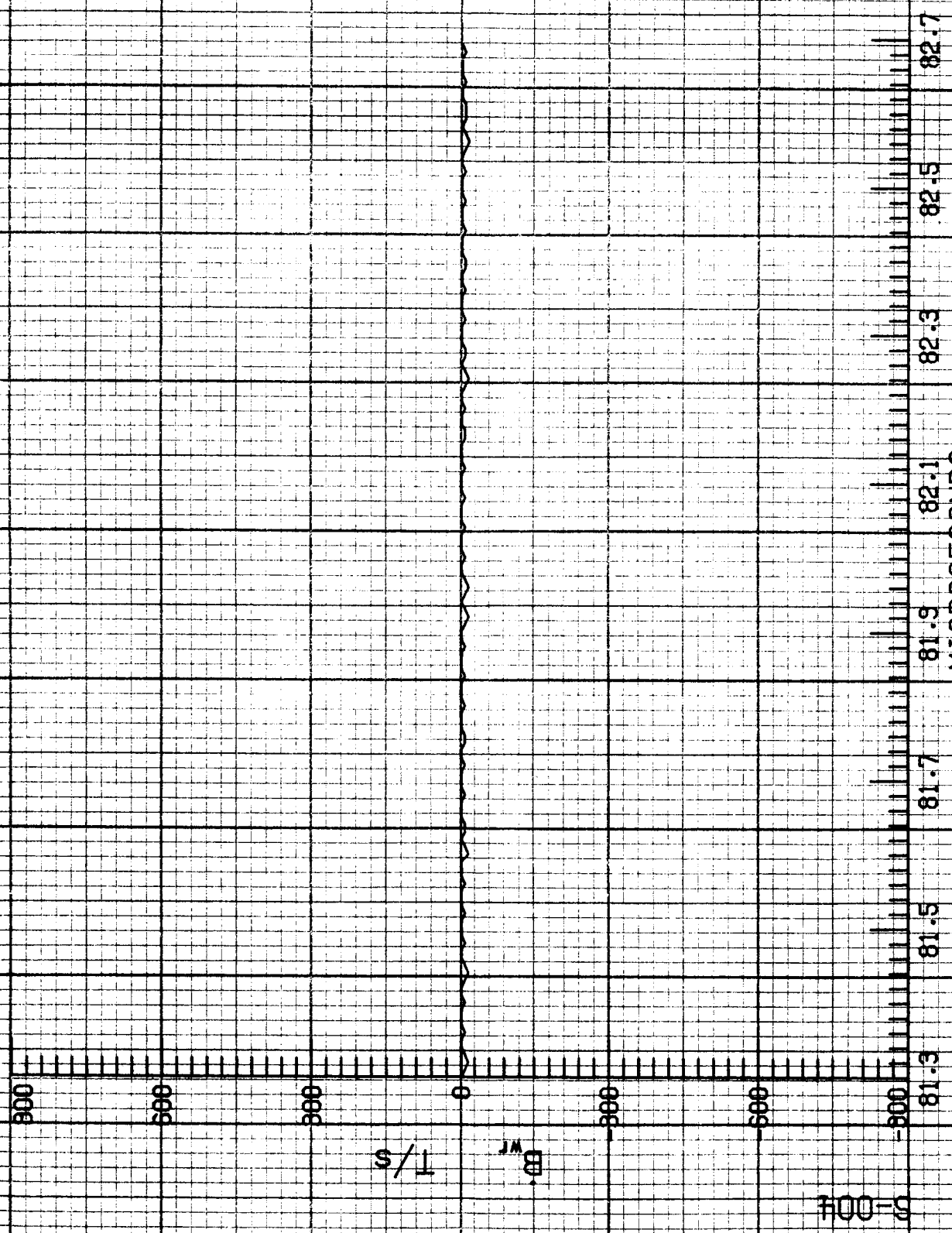
TEST NO. 83-048

F106 LIGHTNING/TK.S/M.THOMAS



CHANNEL NO. 4.0

ORIGINAL PAGE IS
OF POOR QUALITY



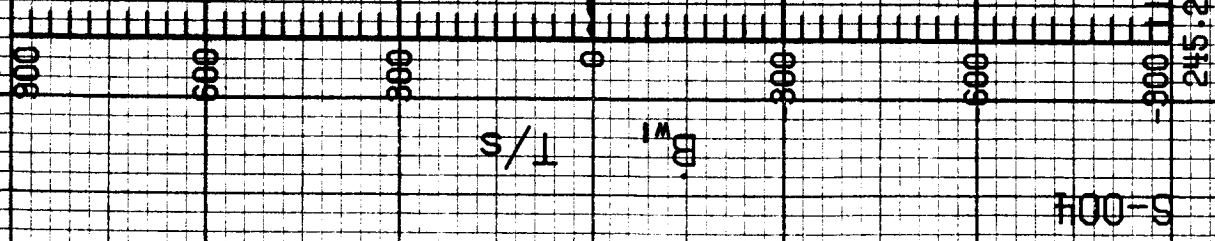
CHANNEL NO. 4.1

FOO-S
B.
T/s

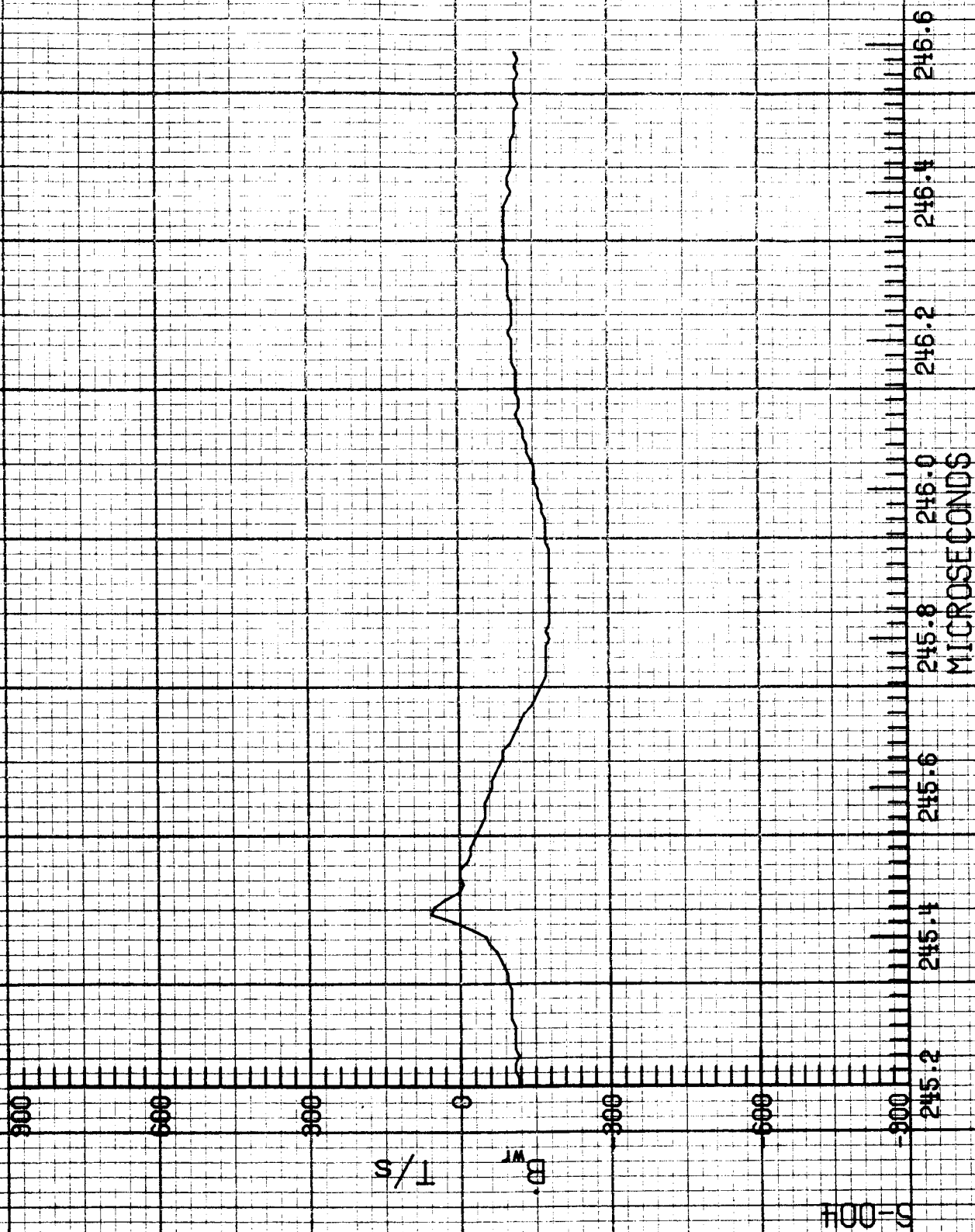
81.3 81.5 81.7 81.9 82.1 82.3 82.5 82.7
MICROSECONDS

CHANNEL NO. 4.2

ORIGINAL PAGE IS
OF POOR QUALITY



CHANNEL NO. 4.0

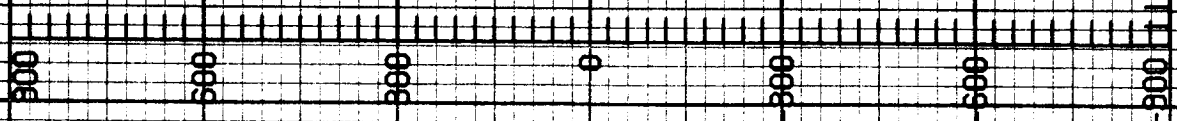


CHANNEL NO. 4.1

ORIGINAL PAGE IS
OF POOR QUALITY

S-004

B_i T/s



245.2

245.4

245.6

245.8

246.0

246.2

246.4

246.6

MICROSECONDS

CHANNEL NO. 4.2

TEST NO. 83-044

F106 LIGHTNING/TK.S/M. THOMAS

N-002

900 600 300 0 300 600 900

T/s
 B_w

81.0

81.2

81.4

81.6

81.8

82.0

82.2

82.4

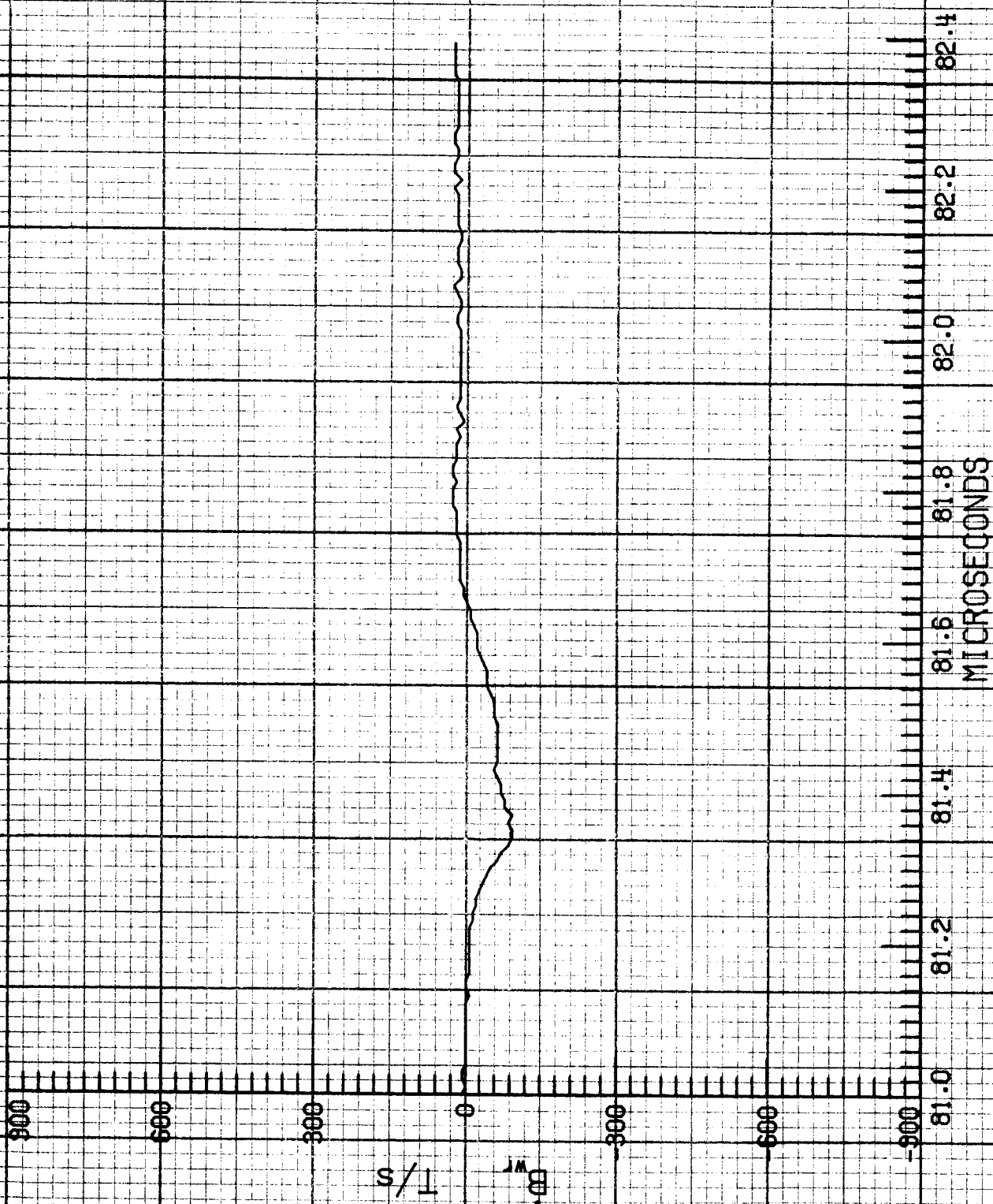
MICROSECONDS

CHANNEL NO. 4.0

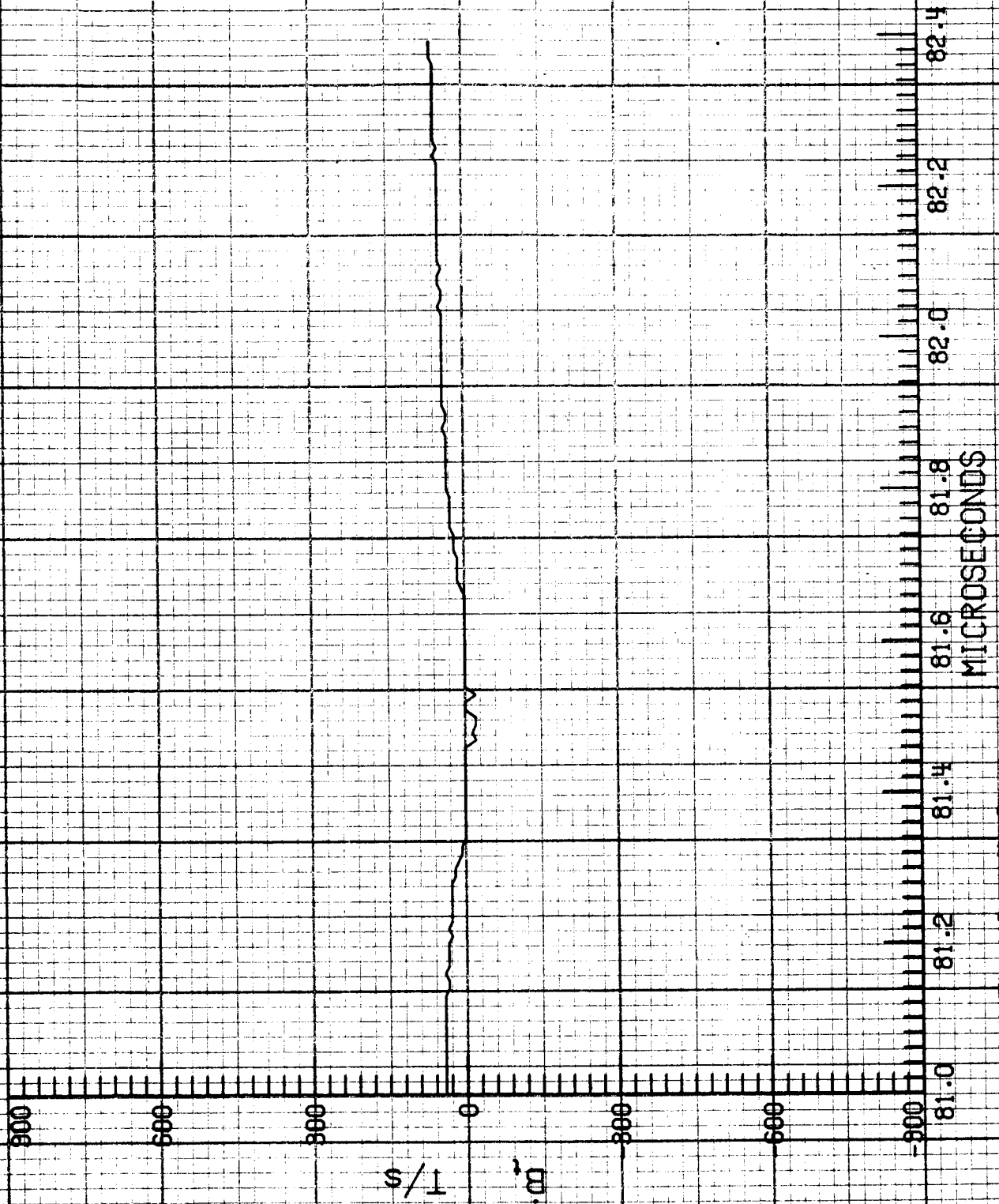
ORIGINAL PAGE IS
OF POOR QUALITY

ORIGINAL PAGE IS
OF POOR QUALITY

N-002



CHANNEL NO. 4.1



N-002

CHANNEL NO. 4.2

ORIGINAL PAGE IS
OF POOR QUALITY

5-006

$D^* \cdot A/m^2$

18 31 9 0 9 31 18

CHANNEL NO. 3.1

MICROSECONDS

80 81 82 83 84 85 86 87

6901

12

0

-4

0

-4

0

-12

\dot{D}_r
 A/m^2

5-006

87

86

85

84

83

82

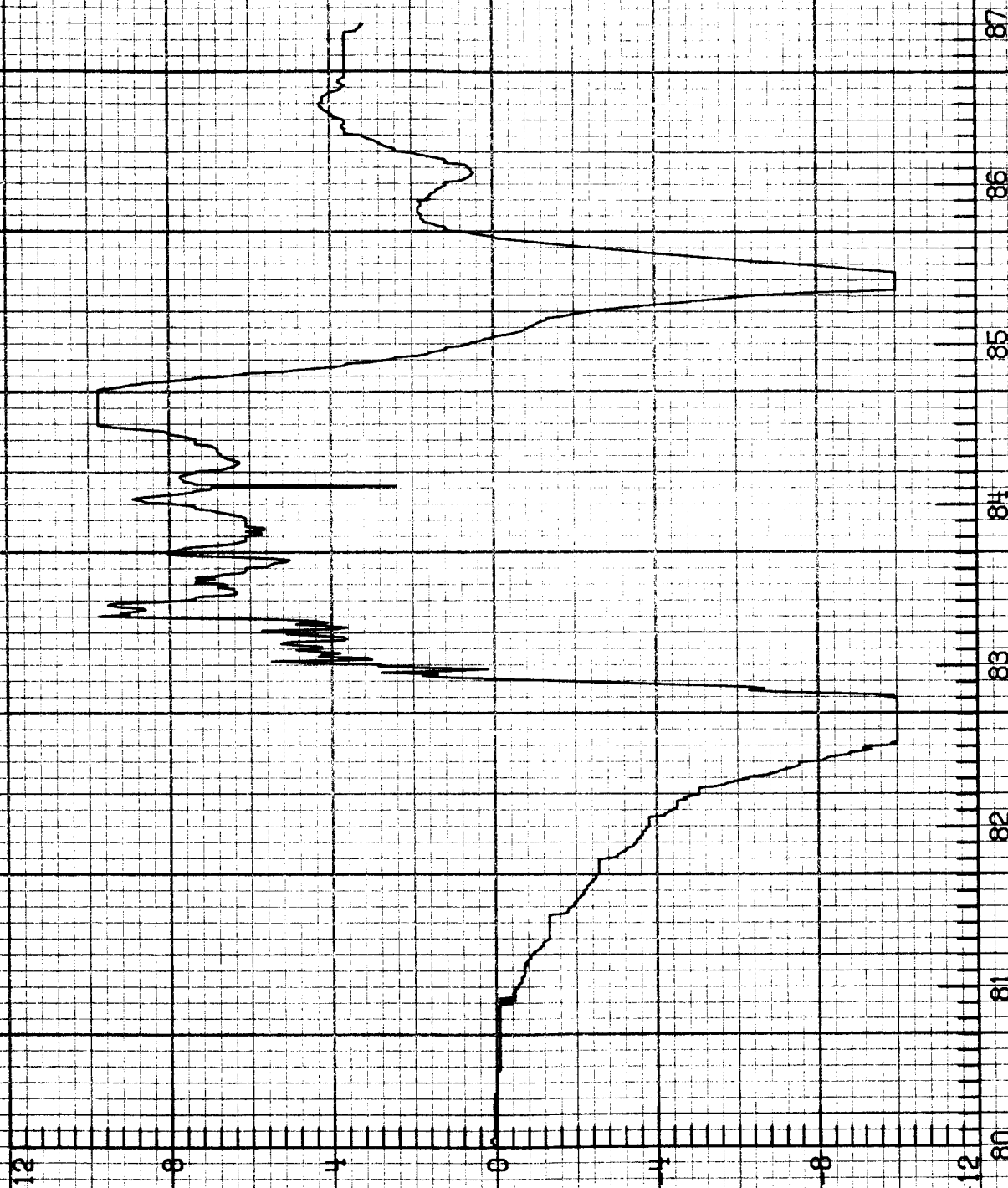
81

80

MICROSECONDS

CHANNEL NO. 3.2

1070

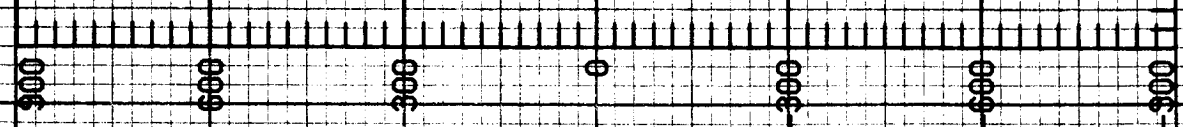


ORIGINAL PAGE IS
OF POOR QUALITY

TEST NO. 83-048

F106 LIGHTNING/TK.S/M. THOMAS

S-006



82.2

82.4

82.6

82.8

83.0

83.2

83.4

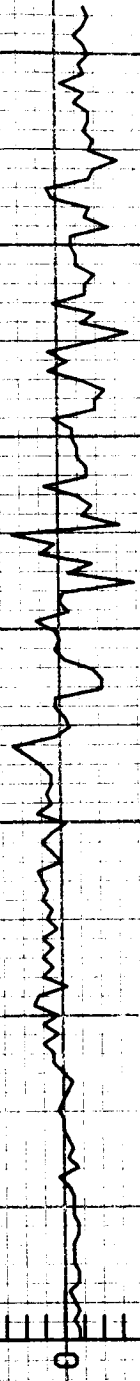
83.6

MICROSECONDS

CHANNEL NO. 4.0

ORIGINAL PAGE IS
OF POOR QUALITY

5-006
T/s
B_{WT}

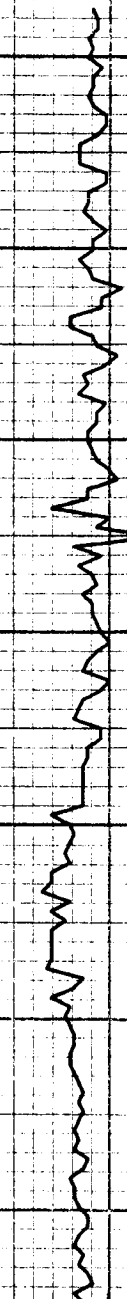


1072

CHANNEL NO. 4.1

ORIGINAL PAGE IS
OF POOR QUALITY

S-006
-300 -600 -900
0 300 600 900
I/s
B_i



82.2 82.4 82.6 82.8 83.0 83.2 83.4 83.6
MICROSECONDS

CHANNEL NO. 4-2

5-005
T/s
0
300
600
900

B_w

409.9 410.1 410.3 410.5 410.7 410.9 411.1 411.3
MICROSECONDS

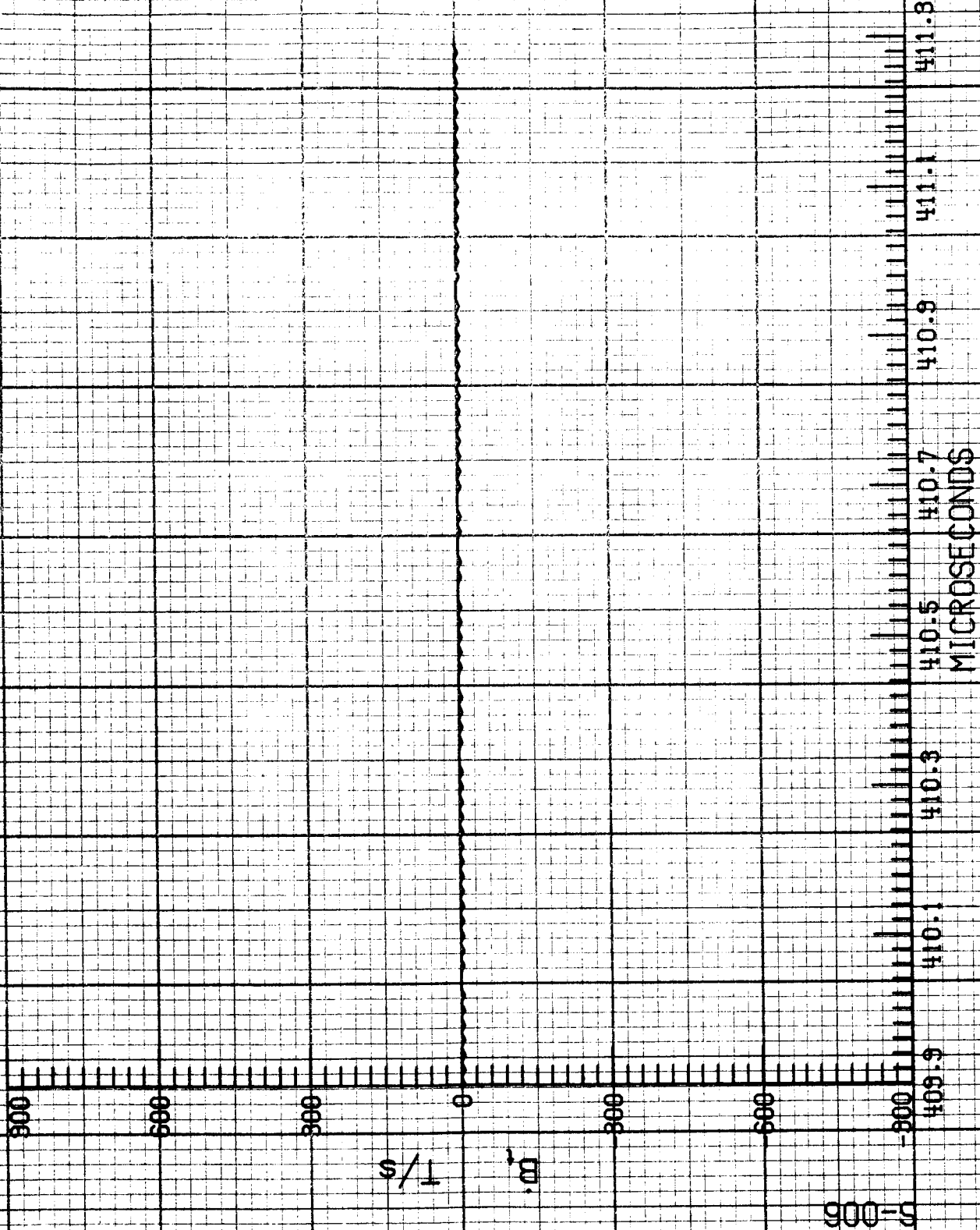
CHANNEL NO. 4.0

1075

B
T/S

MICROSECONDS

409.9	410.1	410.3	410.5	410.7	410.9	411.1	411.3
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CHANNEL NO. 4.2

5-006

ORIGINAL PAGE IS
OF POOR QUALITY

5-007

18 31 9 9 9 31 18

D_w
 A/m^2

81.6 81.8 82.0 82.2 82.4 82.6 82.8 83.0
MICROSECONDS

CHANNEL NO. 3.1

1077

21

0

+

0

+

0

-12

81.6

81.8

82.0

82.2

82.4

82.6

82.8

83.0

D_f
 A/m^2

5-007

MICROSECONDS

CHANNEL NO. 3.2

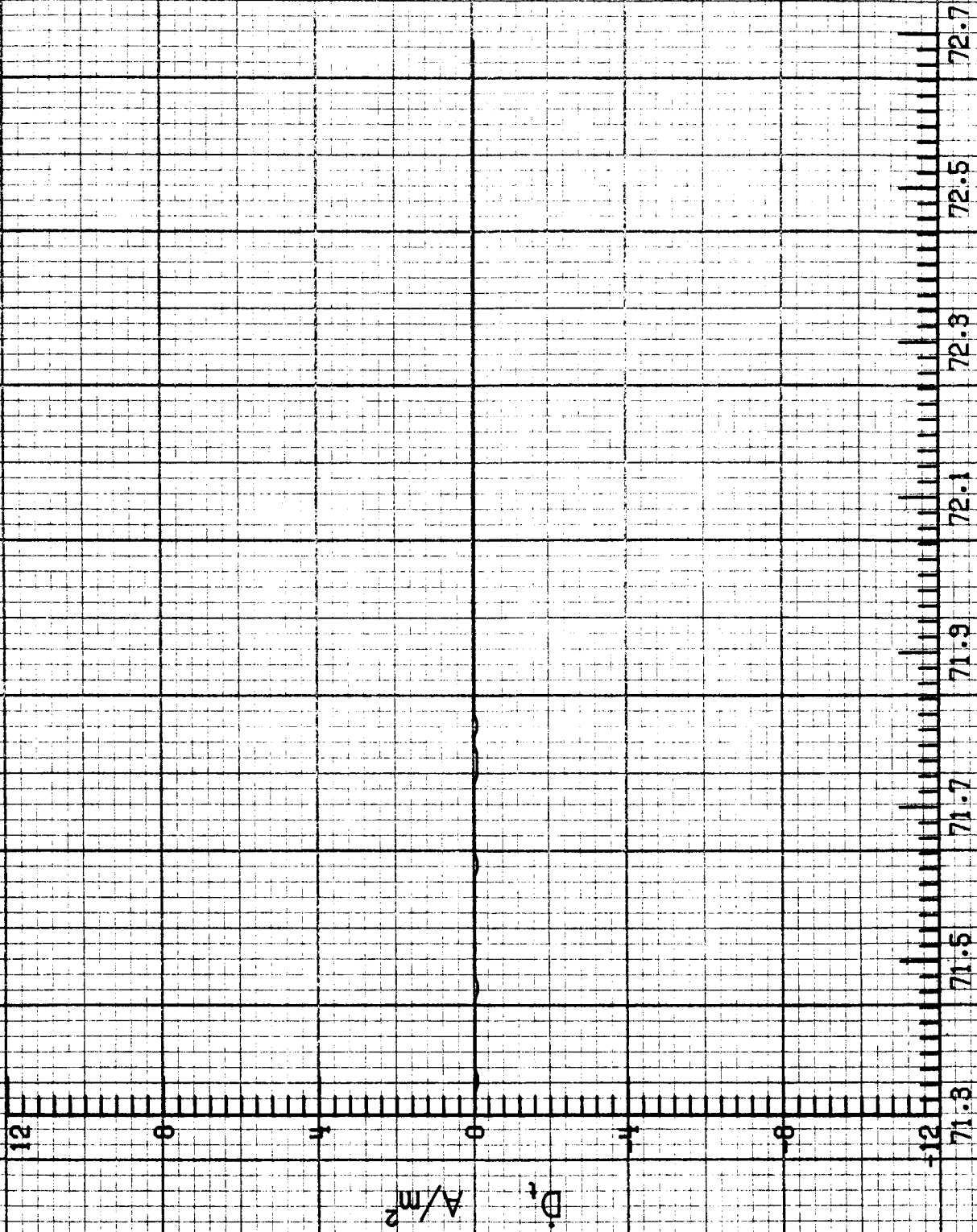
1078

TEST NO. 83-050

ORIGINAL PAGE IS
OF POOR QUALITY

F106 LIGHTNING/TK.3/M. THOMAS

S-001



CHANNEL NO. 2.0

1079

$\times 10^{10}$

24

16

8

0

-8

-16

-24

A/s

I.

6-001

71.3

71.5

71.7

71.9

72.1

72.3

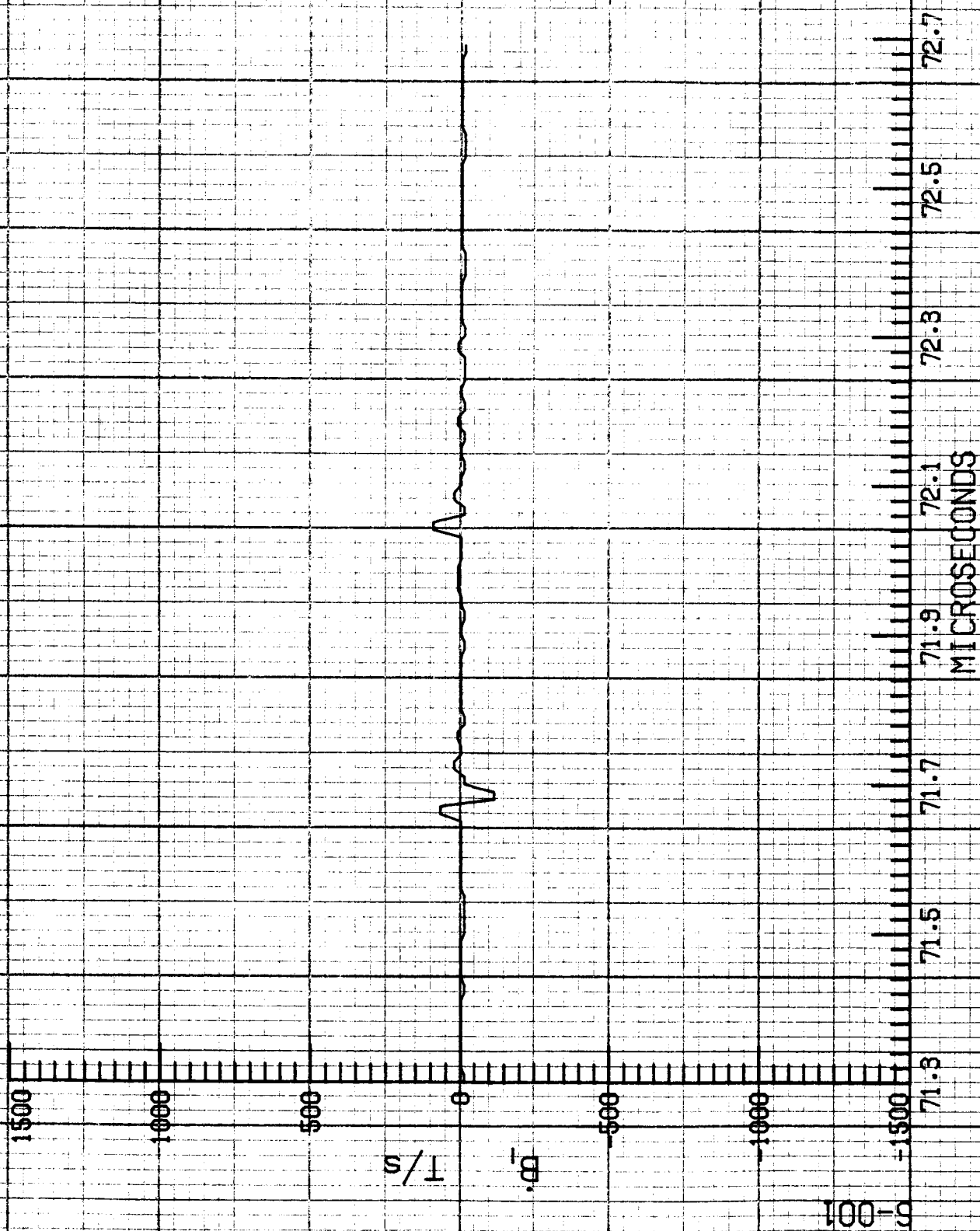
72.5

72.7

MICROSECONDS

CHANNEL NO. 2.1

ORIGINAL PAGE IS
OF POOR QUALITY



18

12

6

0

6

12

18

D^w
 A/m^2

5-001

71.4

71.6

71.8

72.0

72.2

72.4

72.6

72.8

MICROSECONDS

CHANNEL NO. 3.1

1082

TEST NO. 83-050

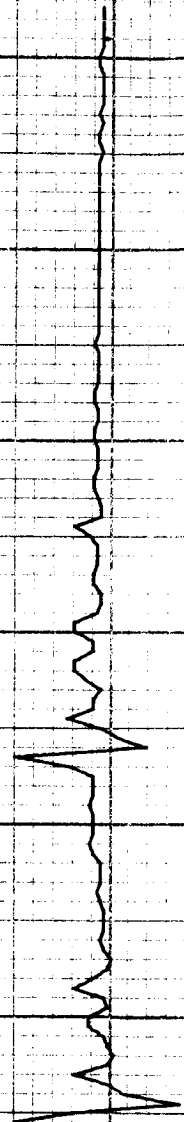
ORIGINAL PAGE IS
OF POOR QUALITY

F106 LIGHTNING/TK.4/M. THOMAS

S-001



$D, A/m^2$



1083

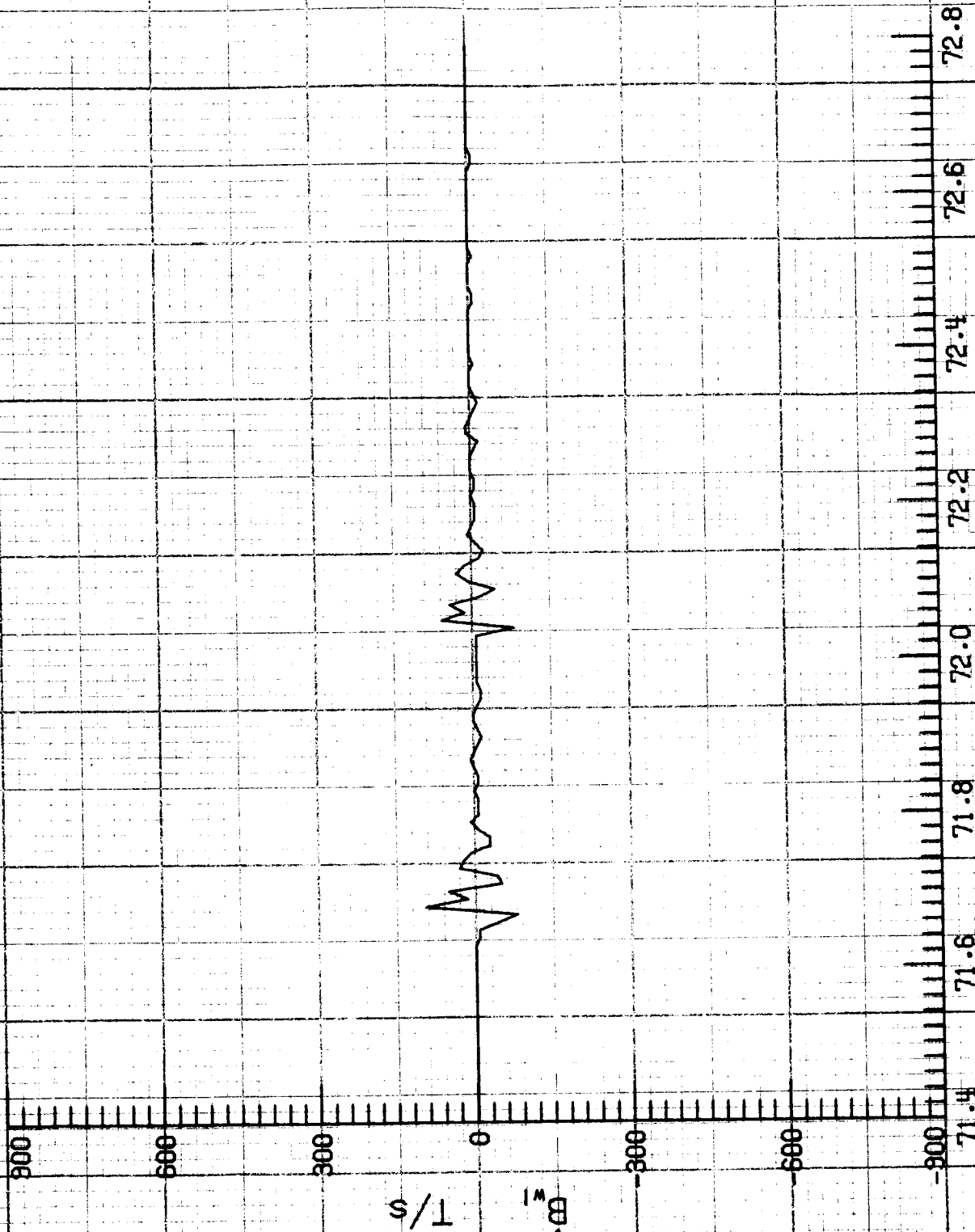
71.4 71.6 71.8 72.0 72.2 72.4 72.6 72.8
MICROSECONDS

CHANNEL NO. 3.2

TEST NO. 83-050

F106 LIGHTNING/TK.S/M. THOMAS

S-001



CHANNEL NO. 4.0

1084

ORIGINAL PAGE IS
OF POOR QUALITY

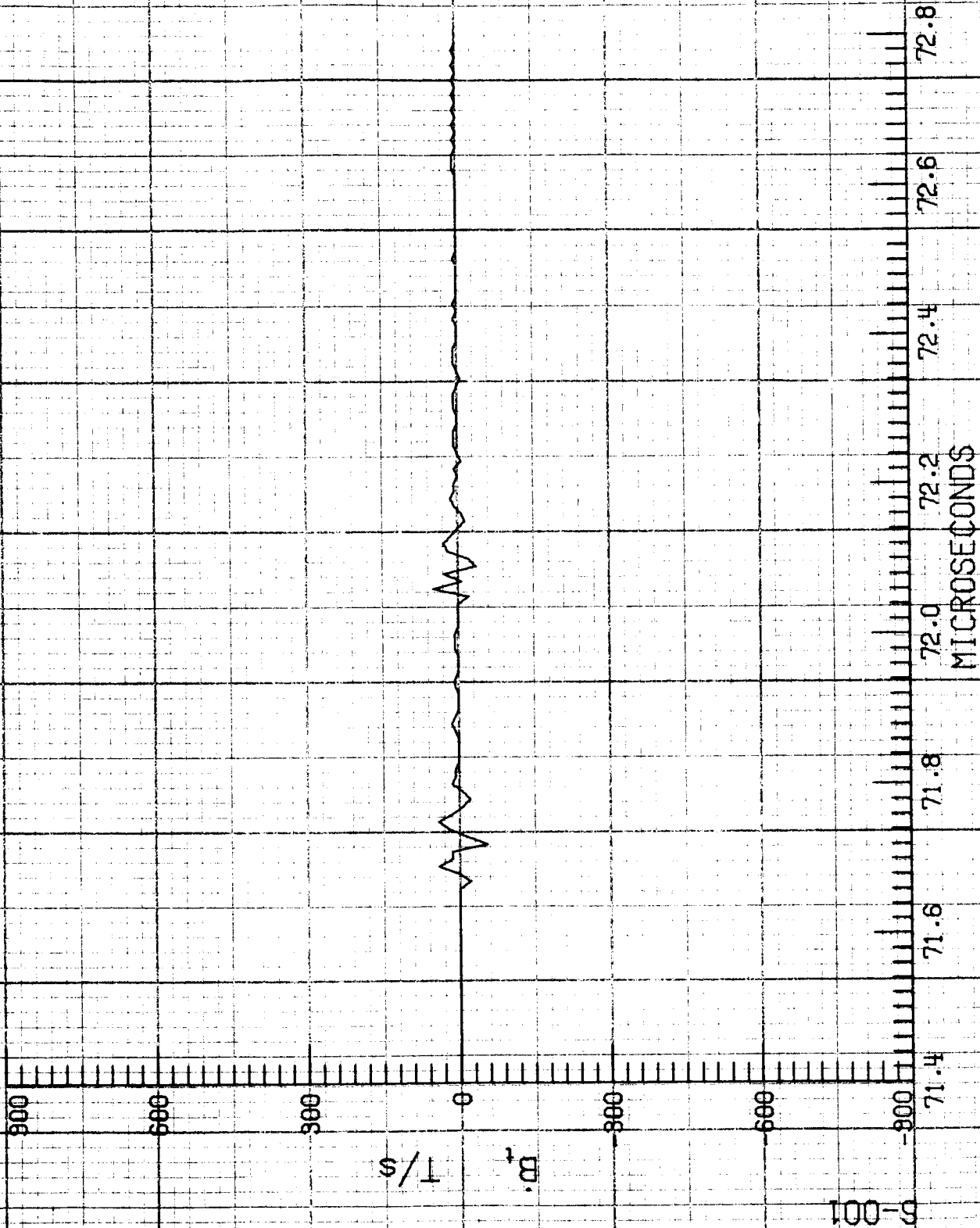
5-001
T/s
BD
WT



MICROSECONDS

CHANNEL NO. 4.1

1085



CHANNEL NO. 4.2

5-001

ORIGINAL PAGE IS
OF POOR QUALITY

8-001

D_t
 A/m^2

12 0 4 0 4 0 12

81.6

81.8

82.0

82.2

82.4

82.6

82.8

83.0

MICROSECONDS

CHANNEL NO. 2.0

1087

x 10¹⁰

24

16

8

A/s

1.1

0

-8

-16

-24

0-001

81.6

81.8

82.0

82.2

82.4

82.6

82.8

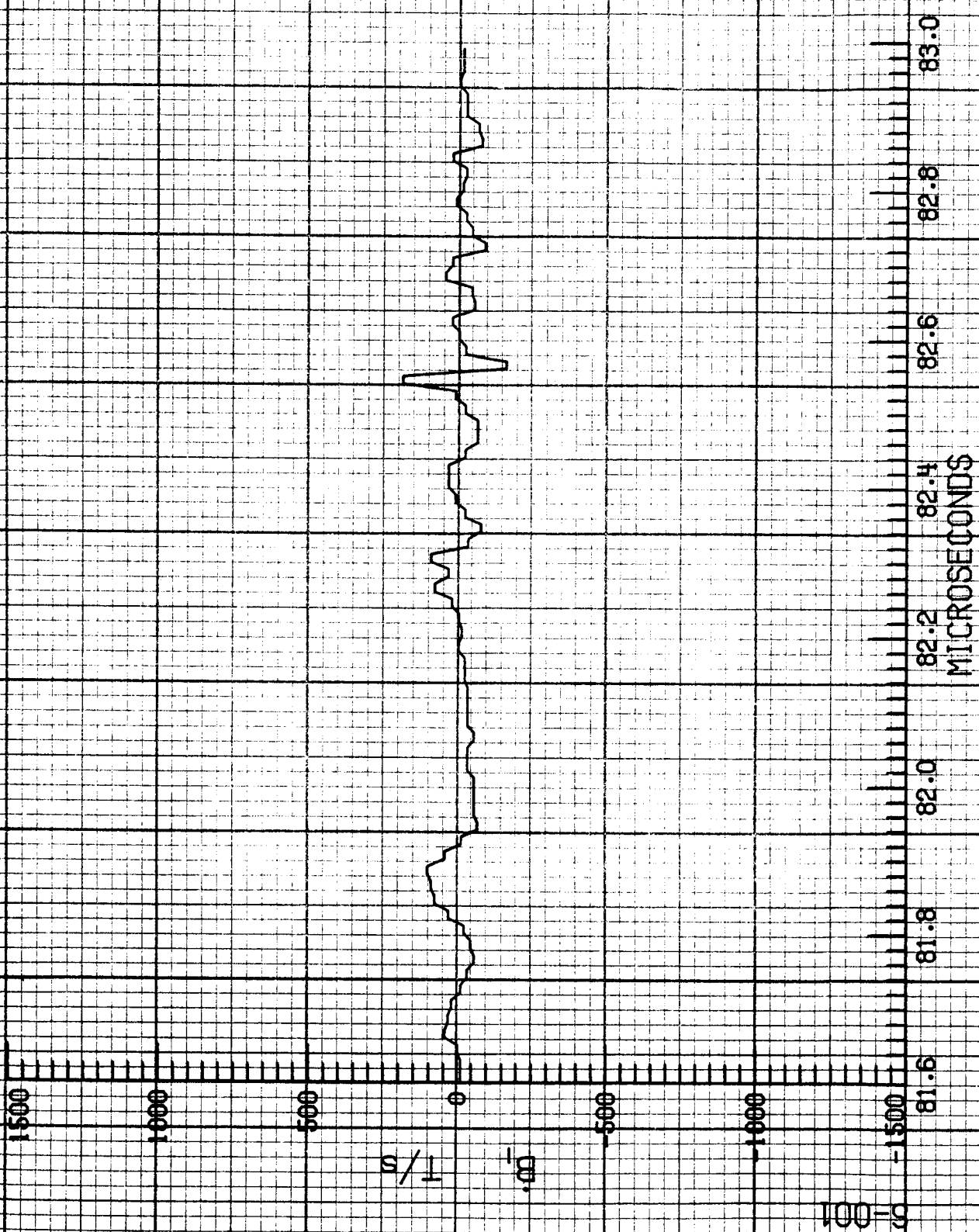
83.0

MICROSECONDS

CHANNEL NO. 2.1

1088

ORIGINAL PAGE IS
OF POOR QUALITY



CHANNEL NO. 2.2

18 12 6 0 6 12 18

D_w
 A/m^2

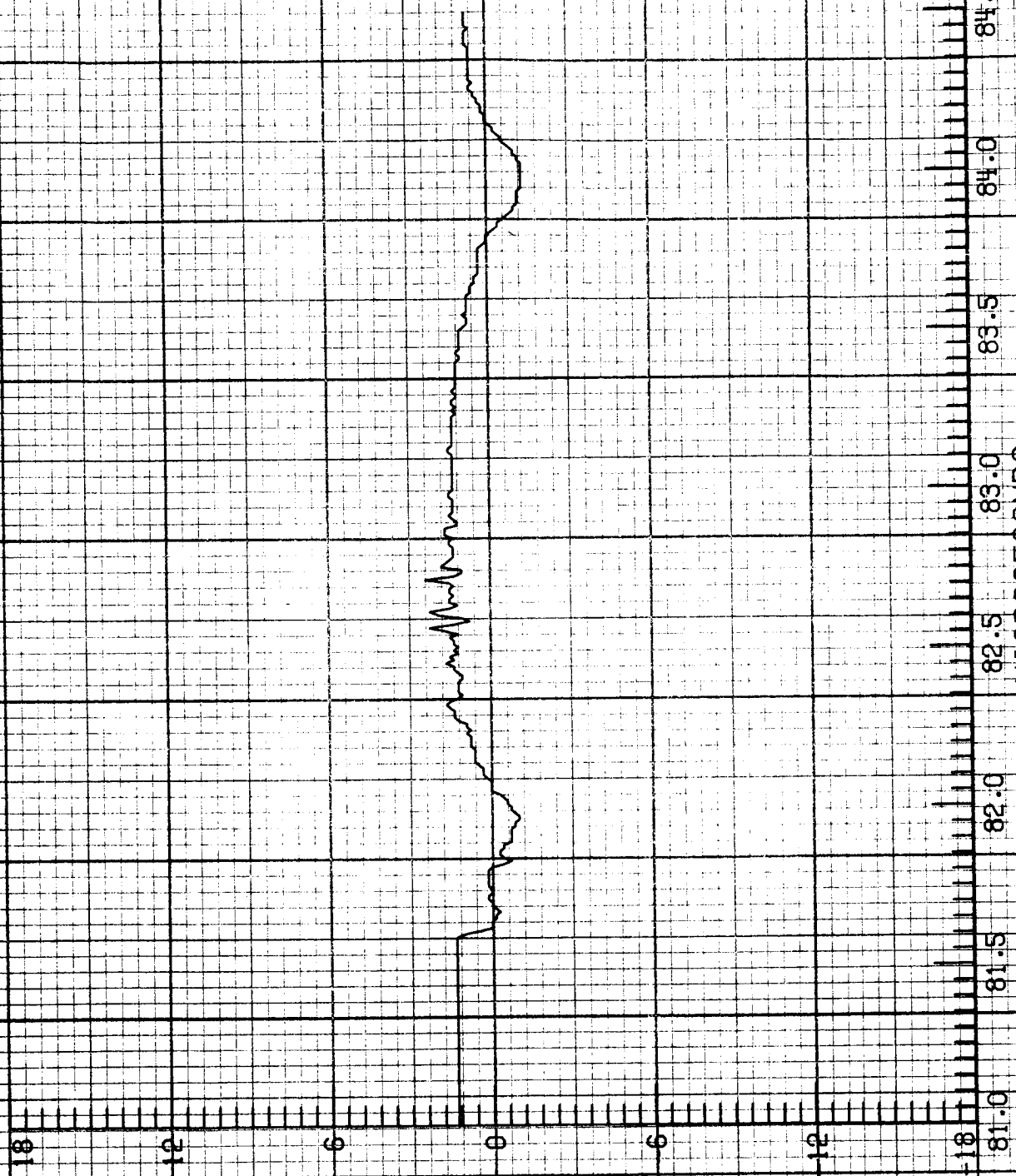
S-001

1090

81.0 81.5 82.0 82.5 83.0 83.5 84.0 84.5

MICROSECONDS

CHANNEL NO. 3.1



ORIGINAL PAGE IS
OF POOR QUALITY

S-001

12

9

6

3

0

-3

-6

81.0

81.5

82.0

82.5

83.0

83.5

84.0

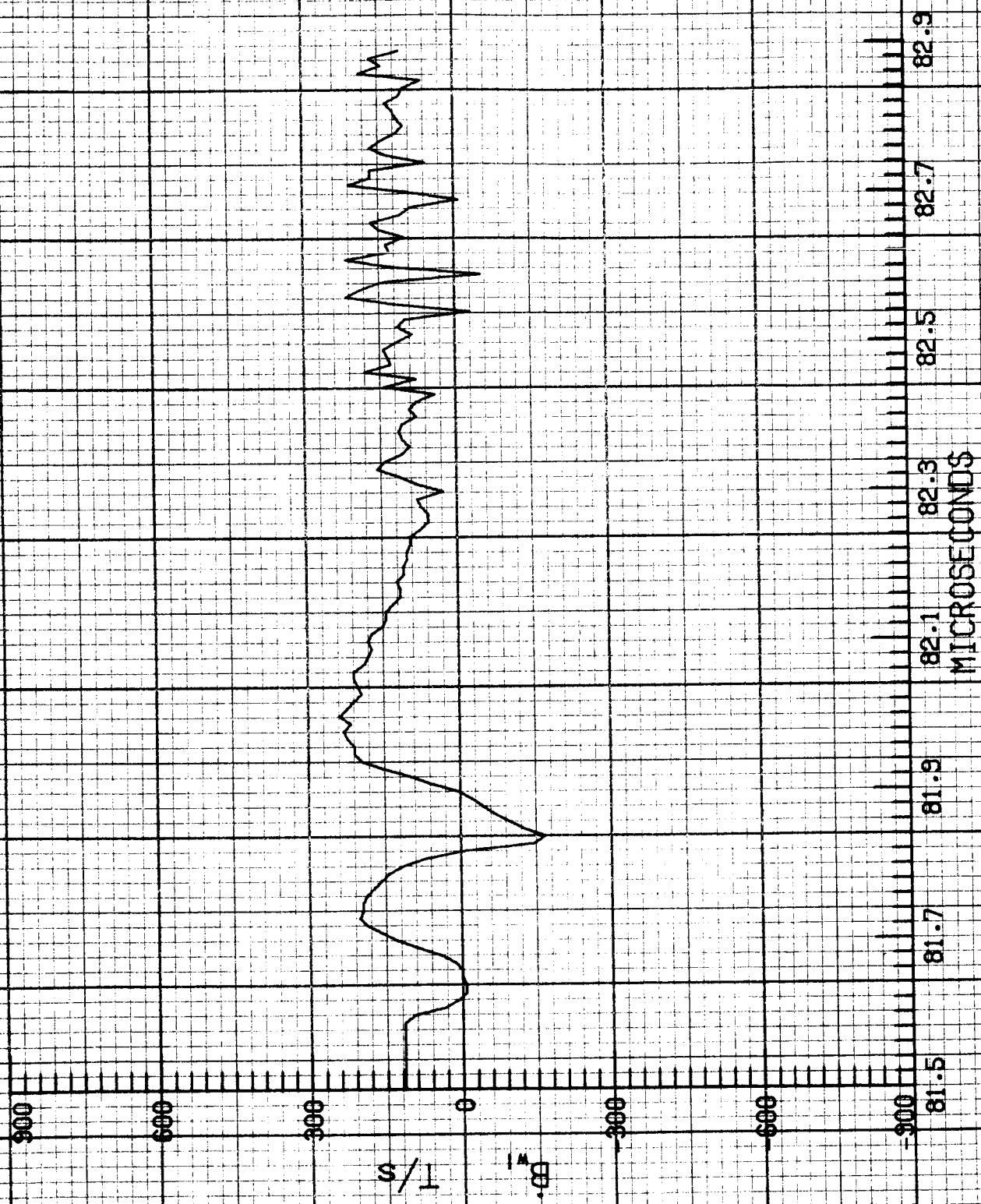
84.5

MICROSECONDS

CHANNEL NO. 3.2

D_r
 A/m^2

1091



CHANNEL NO. 4.0

ORIGINAL PAGE IS
OF POOR QUALITY

300
600
300
0
300
600
-300

T/S
DB_{WT}

81.5 81.7 81.9 82.1 82.3 82.5 82.7 82.9

MICROSECONDS

CHANNEL NO. 4.1

1093

900

600

300

0

300

600

900

T/s

B_t

5-001

81.5

81.7

81.9

82.1

82.3

82.5

82.7

82.9

MICROSECONDS

CHANNEL NO. 4.2

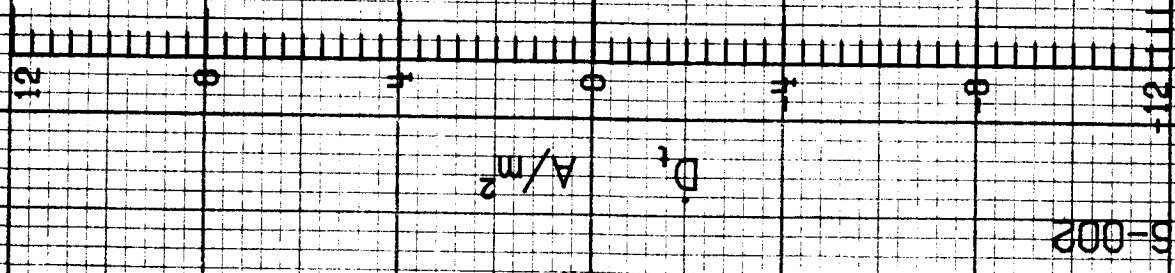
1094



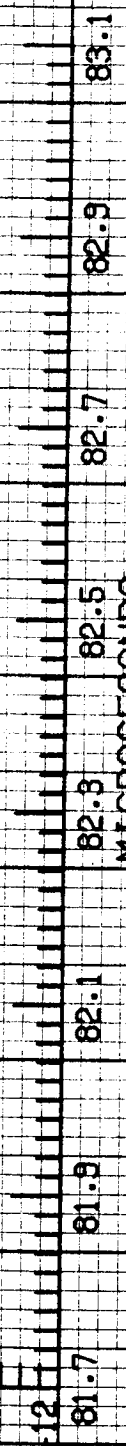
TEST NO. 83-050

F106 LIGHTNING/TK. 3/M. THOMBS

ORIGINAL PAGE IS
OF POOR QUALITY



D_t
 A/m^2



MICROSECONDS

CHANNEL NO. 2.0

1095

9601

$\times 10^{10}$

24

16

8

0

8

16

24

A/s

I.

5-002

81.7

81.9

82.1

82.3

82.5

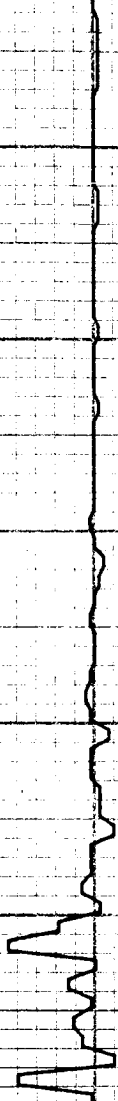
82.7

82.9

83.1

MICROSECONDS

CHANNEL NO. 2.1



ORIGINAL PAGE IS
OF POOR QUALITY

1500
1000
500
0
-500
-1000
-1500

T/s
B₁

8-002

81.7

81.9

82.1

82.3

82.5

82.7

82.9

83.1

MICROSECONDS

CHANNEL NO. 2.2

18

12

6

0

6

12

18

A/m^2

D_w

5-002

81.7

81.9

82.1

82.3

82.5

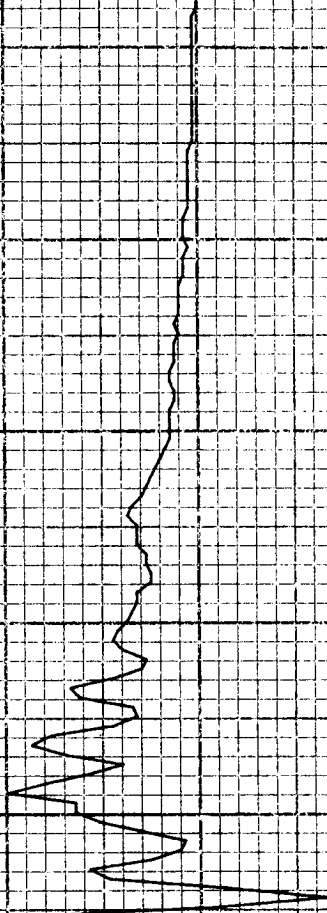
82.7

82.9

83.1

MICROSECONDS

CHANNEL NO. 3.1



ORIGINAL PAGE IS
OF POOR QUALITY

12

0

+

A/m^2

D_r

+

0

12

S-002

81.7

81.9

82.1

82.3

82.5

82.7

82.9

83.1

MICROSECONDS

CHANNEL NO. 3.2

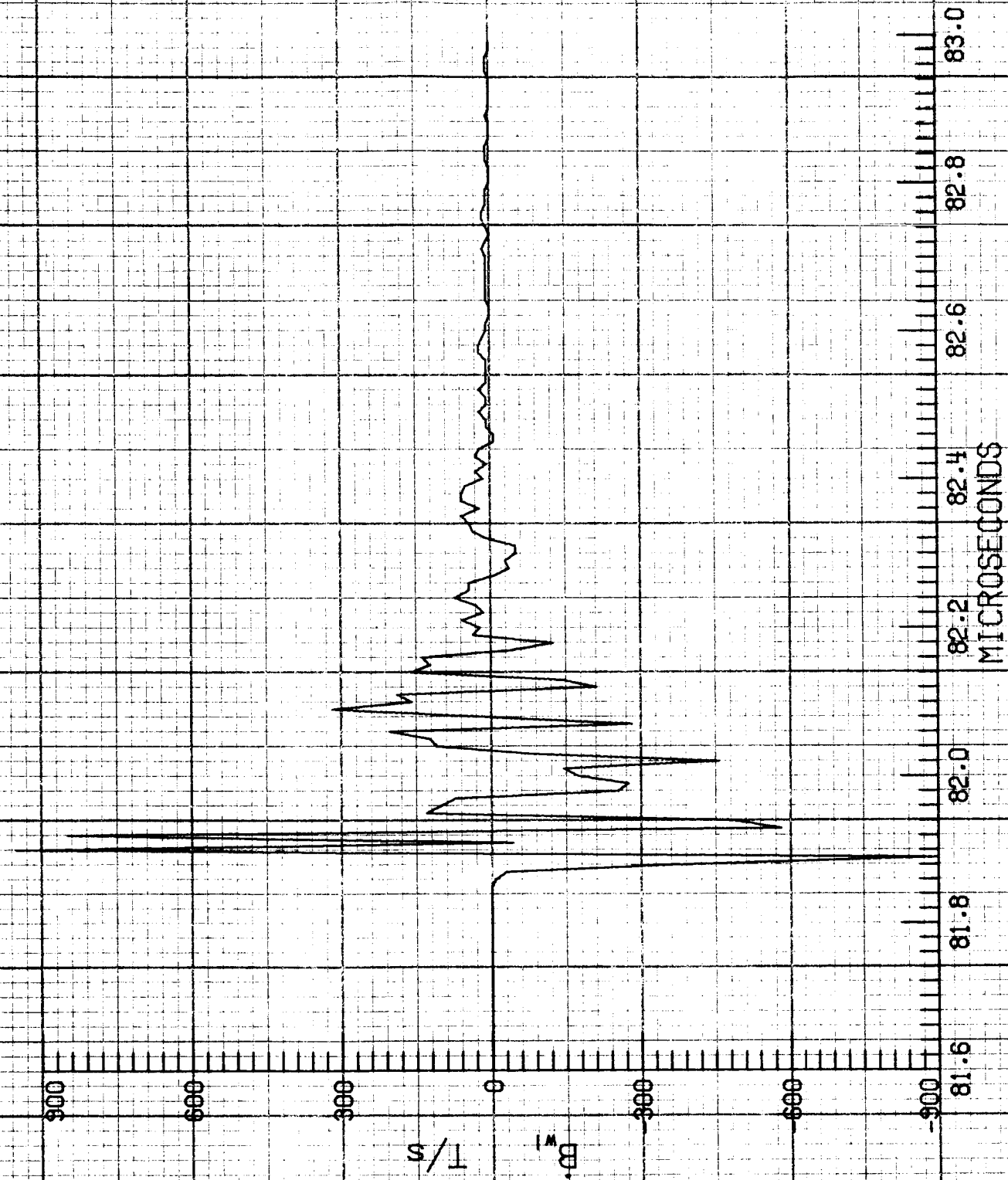
6601

ORIGINAL PAGE IS
OF POOR QUALITY

F106 LIGHTNING/TX. S/M. THOMAS

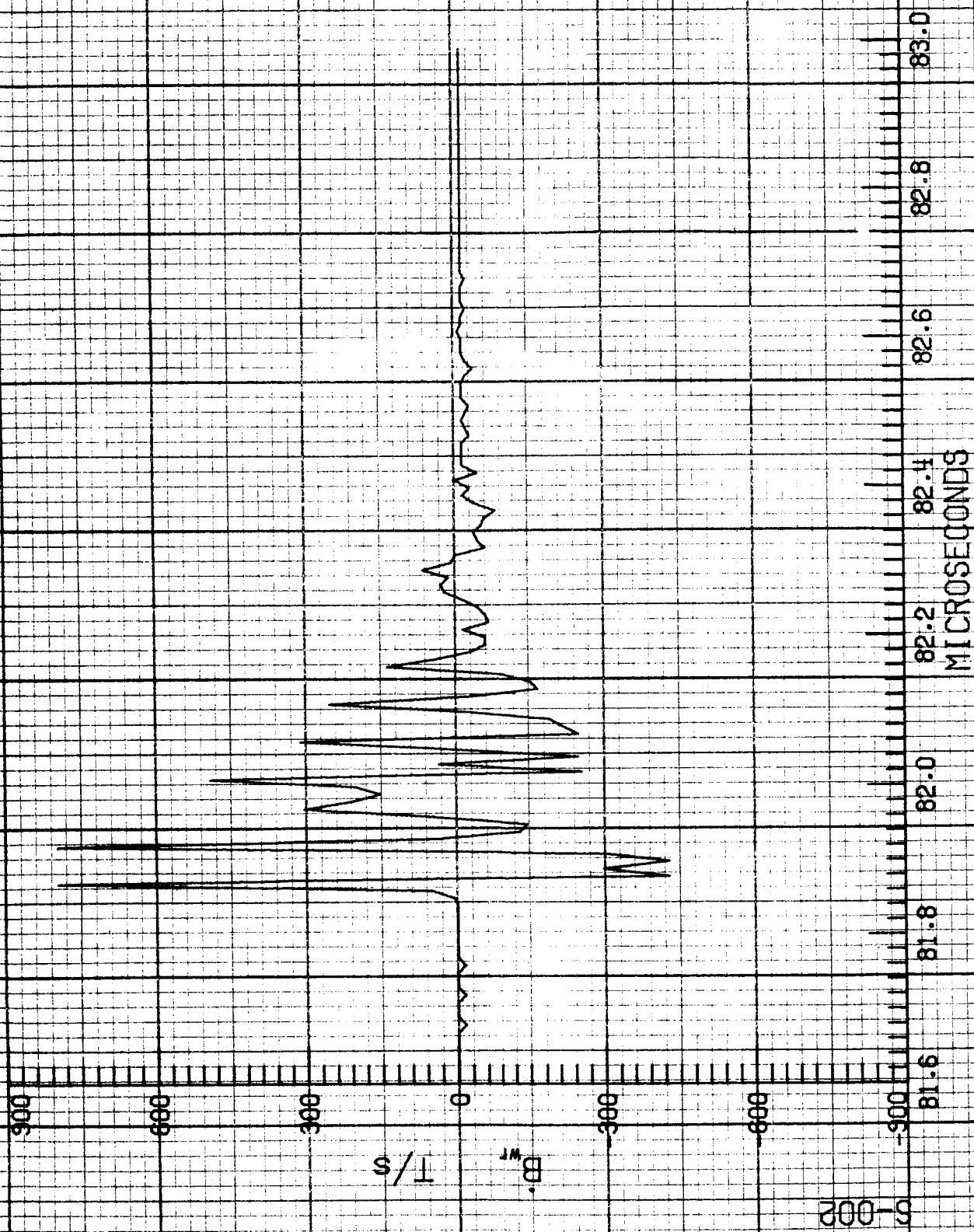
TEST NO. 83-050

5-002

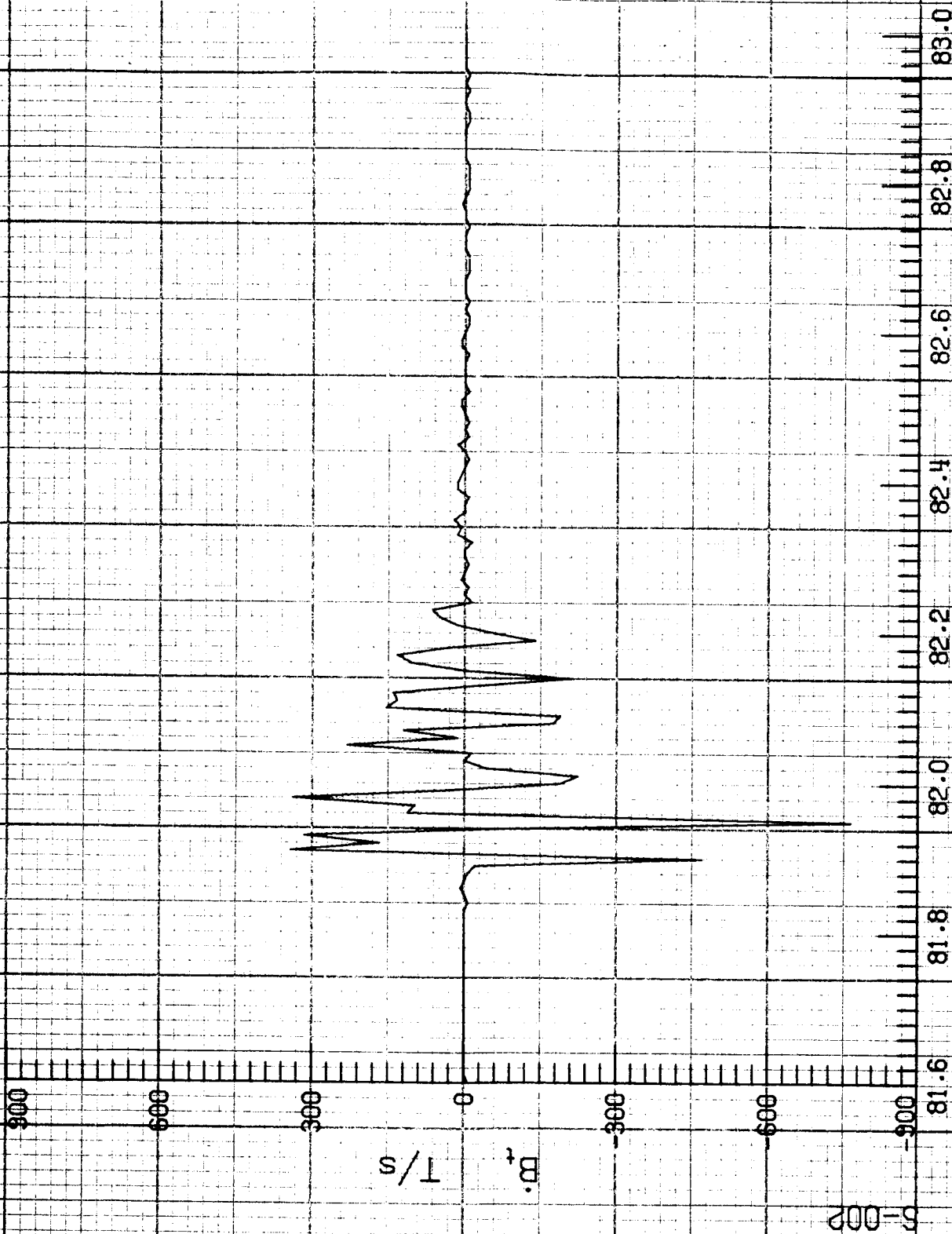


CHANNEL NO. 4.0

ORIGINAL PAGE IS
OF POOR QUALITY



1101



CHANNEL NO. 4.2

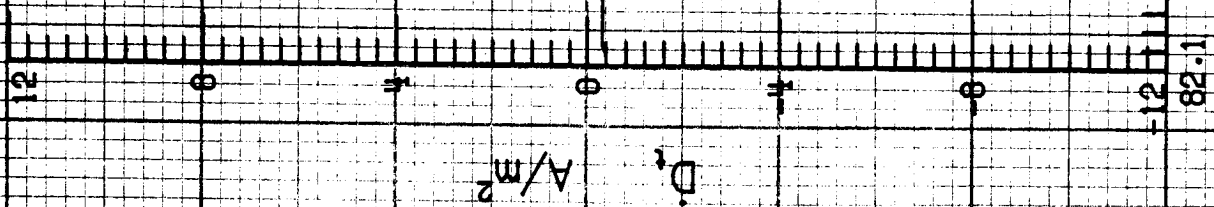
5-002

ORIGINAL PAGE IS
OF POOR QUALITY

F106 LIGHTNING/TK-3/M-THOMAS

S-003

TEST NO. 83-050



MICROSECONDS

CHANNEL NO. 2-0

1103

x 10¹⁰

24

16

8

0

-8

-16

-24

82.1

82.3

82.5

82.7

82.9

83.1

83.3

83.5

A/s

I.

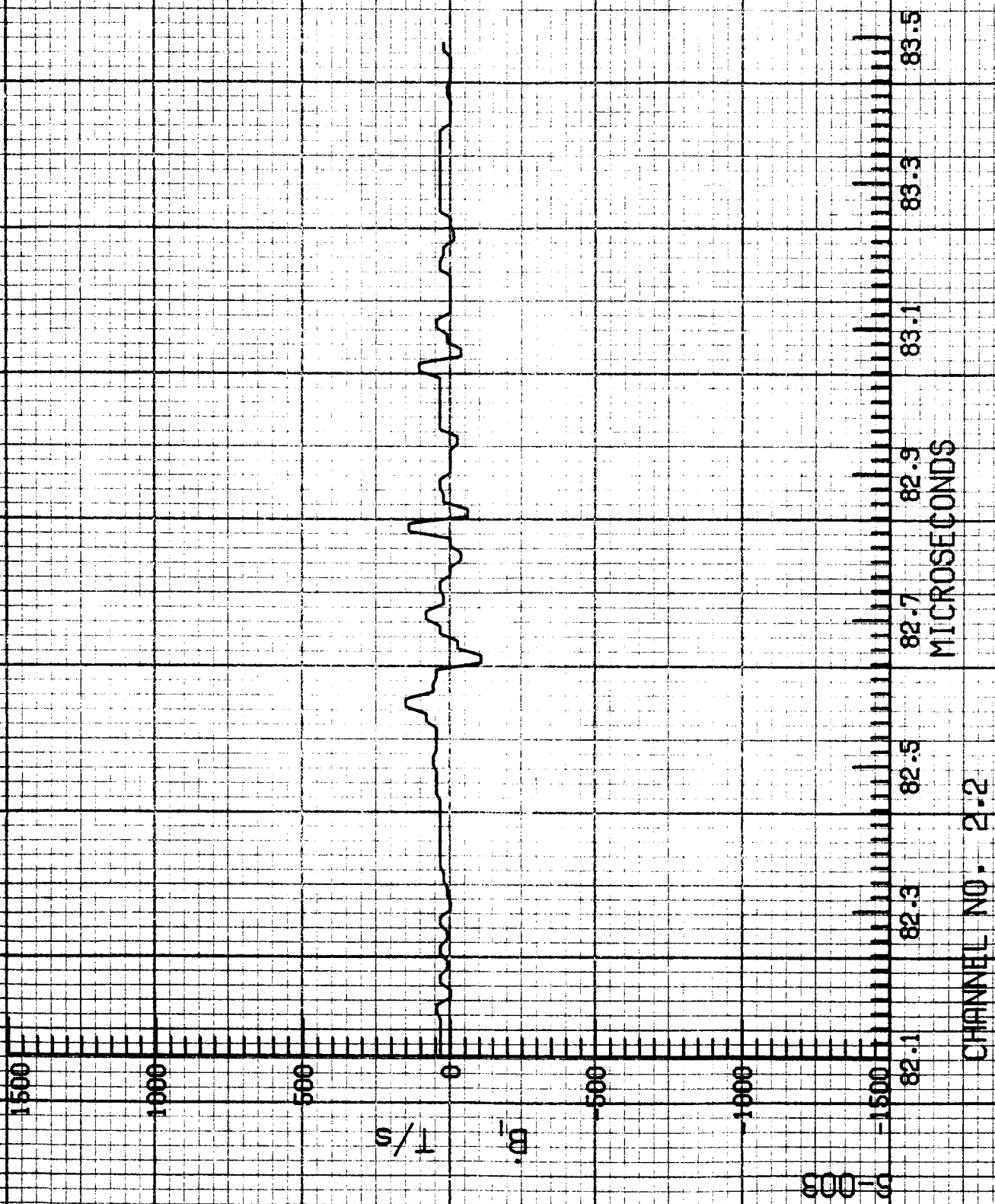
5-003

MICROSECONDS

CHANNEL NO. 2.1

1104

ORIGINAL PAGE IS
OF POOR QUALITY



1106

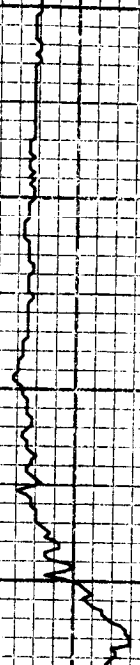
S-003
-18
-12
-6
0
6
12
18

$\frac{A}{m^2}$

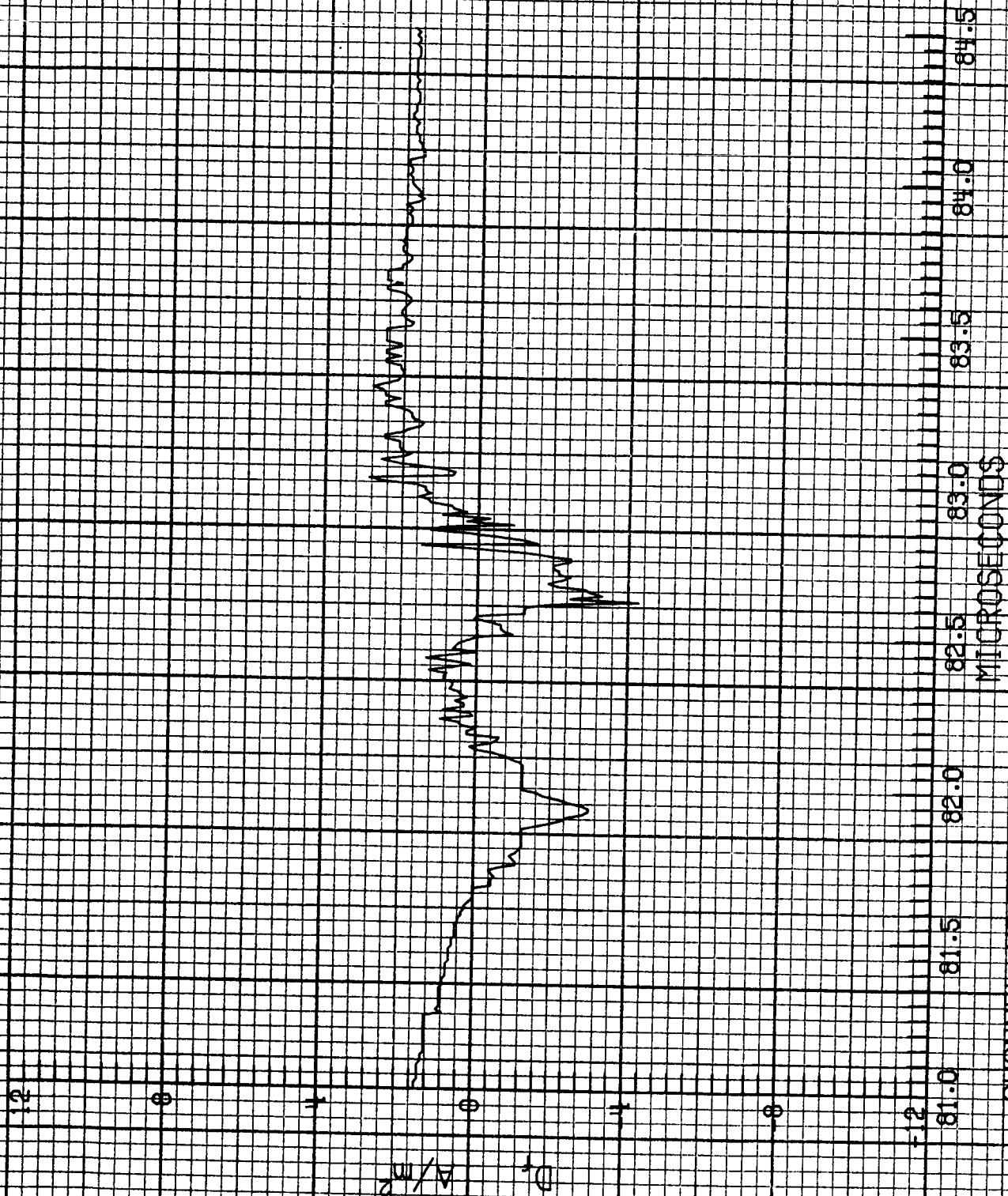
$\frac{D}{m^2}$

81.0 81.5 82.0 82.5 83.0 83.5 84.0 84.5
MICROSECONDS

CHANNEL NO. 3.1



ORIGINAL PAGE IS
OF POOR QUALITY



1107

800
600
400
200
0
-200
-400
-600
-800

I/s
 B^*1

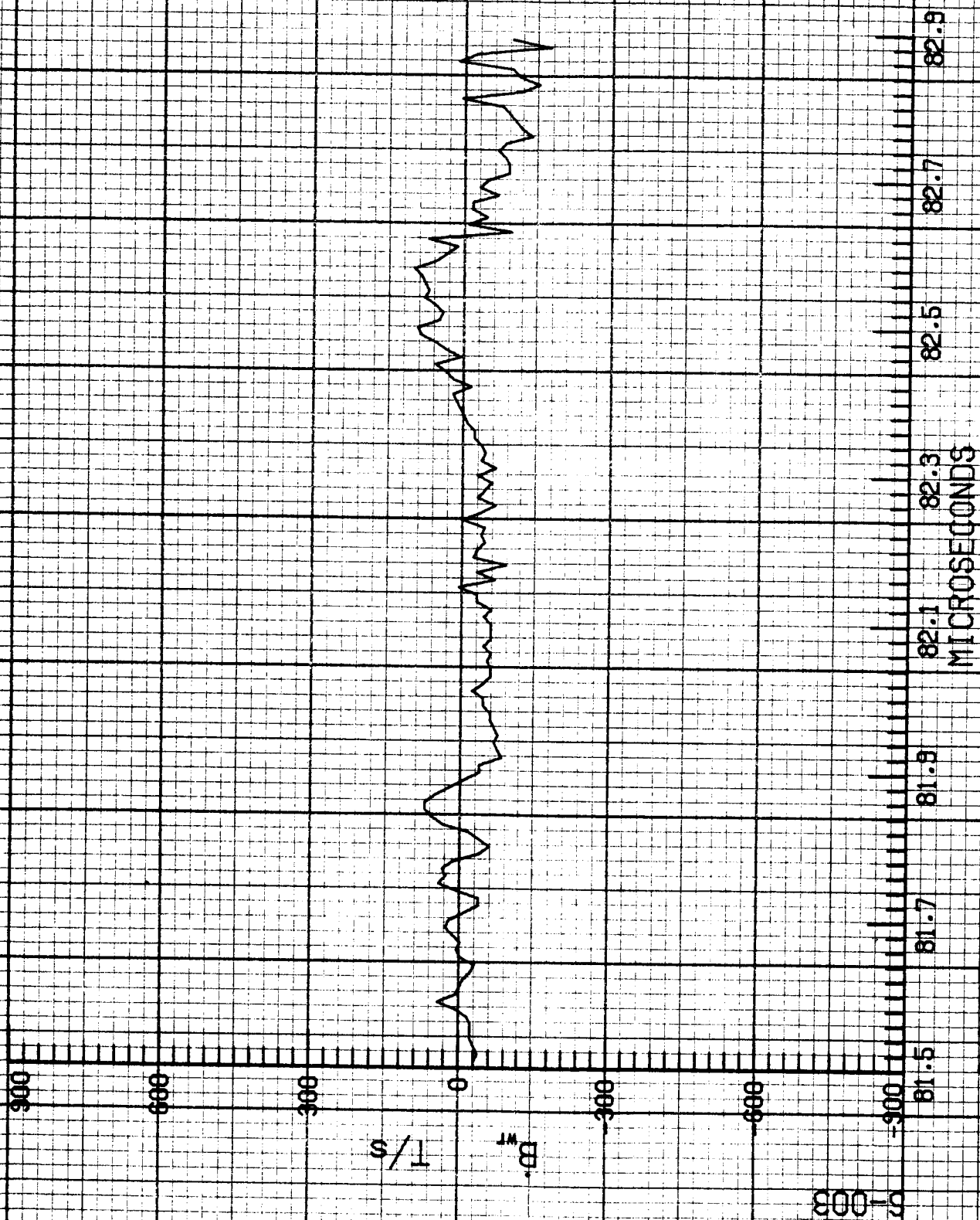
81.5 81.7 81.9 82.1 82.3 82.5 82.7 82.9

MICROSECONDS

CHANNEL NO. 4.0



ORIGINAL PAGE IS
OF POOR QUALITY



300

600

300

0

300

600

-300

$\frac{D_t}{T/s}$

5-003

81.5

81.7

81.9

82.1

82.3

82.5

82.7

82.9

MICROSECONDS

CHANNEL NO. 4.2

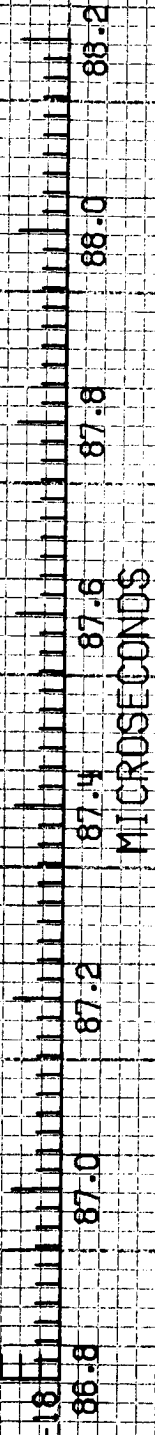
1110



ORIGINAL PAGE IS
OF POOR QUALITY

5-003
A/m²
D_w

III



CHANNEL NO. 3.1

SP-003
D₁
A/m²

D₁
A/m²

86.8 87.0 87.2 87.4 87.6 87.8 88.0 88.2

MICROSECONDS

CHANNEL NO. 3.2

1112

TEST NO. 83-050

F106 LIGHTNING/TK.3/M.THOMAS

ORIGINAL PAGE IS
OF POOR QUALITY

5-006



D_t
 A/m^2



MICROSECONDS

CHANNEL NO. 2.0

1113

5111

$\times 10^{10}$

A/S

I.

5-006

80.6

80.8

81.0

81.2

81.4

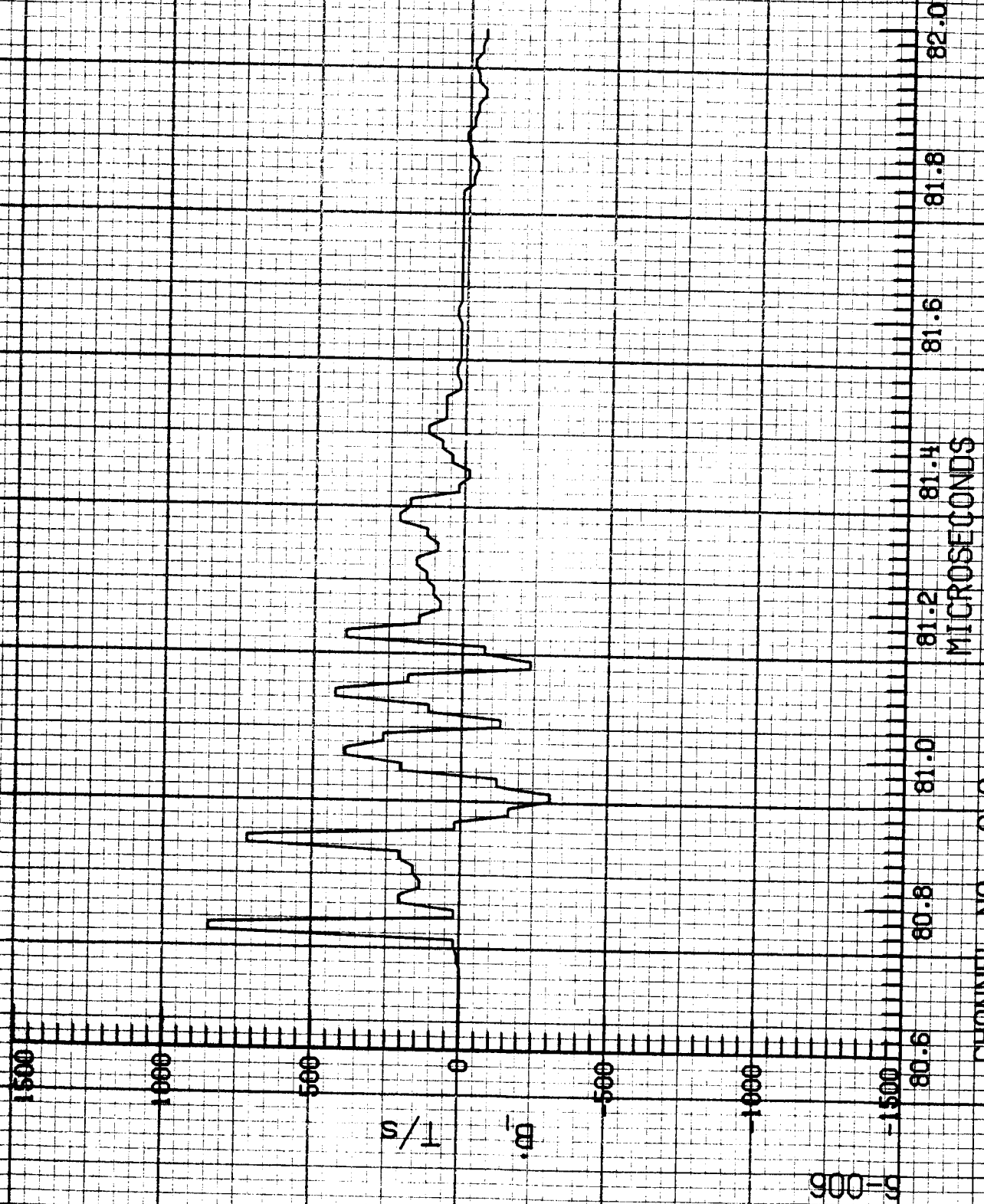
81.6

81.8

82.0

MICROSECONDS

CHANNEL NO. 2.1



ORIGINAL PAGE IS
OF POOR QUALITY

1115

18

15

9

0

9

12

-18

81.5

81.7

81.9

82.1

82.3

82.5

82.7

82.9

A/m^2

D_v

S-006

CHANNEL NO. 3.1

MICROSECONDS

1116

ORIGINAL PAGE IS
OF POOR QUALITY

F106 LIGHTNING/TK.5/M. THOMAS

S-006

300
600
300
0
300
600
-300

T/s
 B^w

80.6

80.8

81.0

81.2

81.4

81.6

81.8

82.0

MICROSECONDS

CHANNEL NO. 41.0

1117

900
600
300
0
-300
-600
-900

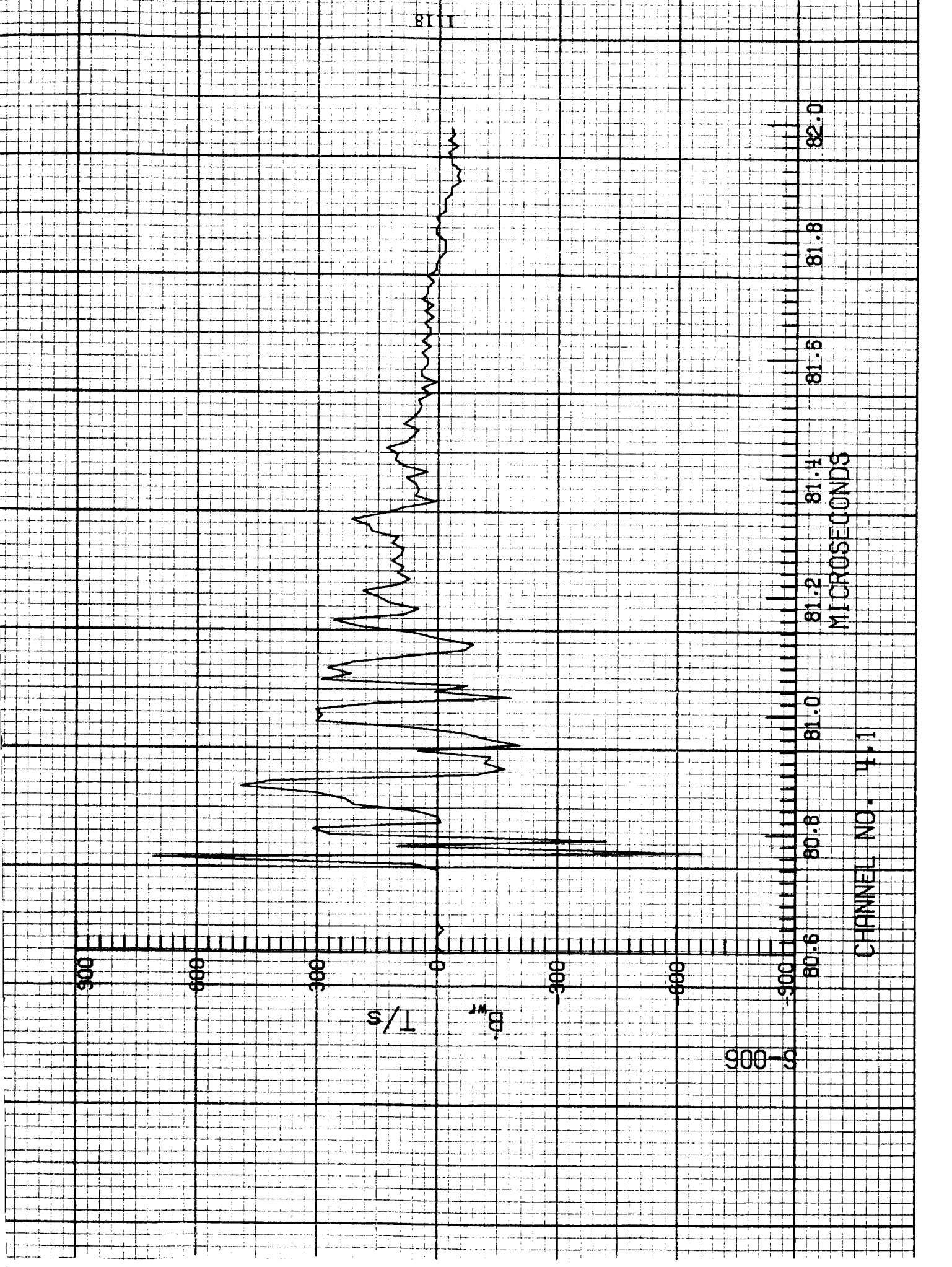
T/s
 B_{WT}

80.6 80.8 81.0 81.2 81.4 81.6 81.8 82.0

MICROSECONDS

CHANNEL NO. 4.1

81.1



ORIGINAL PAGE IS
OF POOR QUALITY

5-006

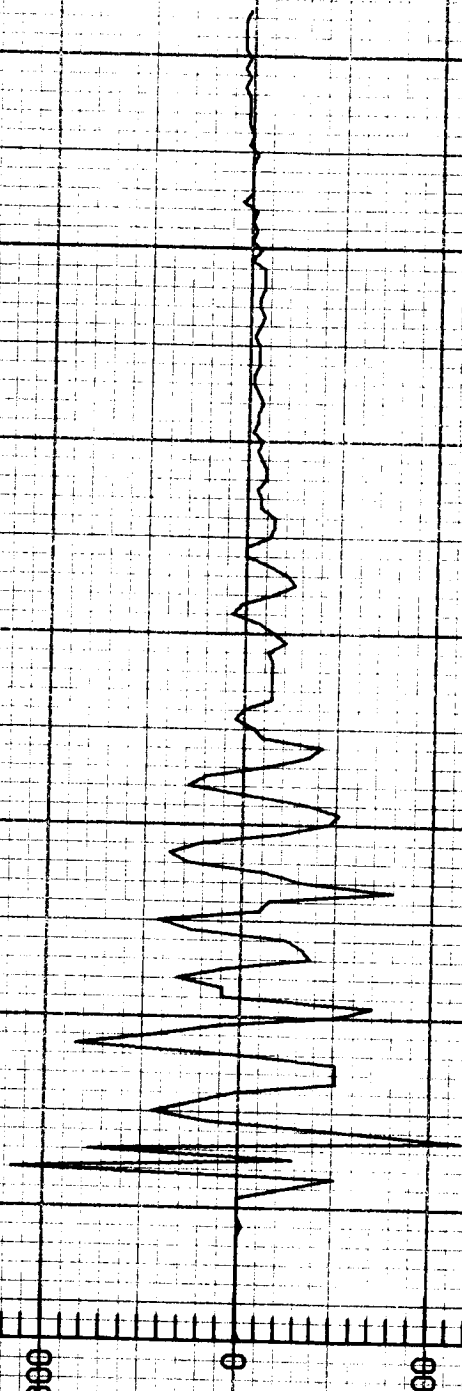
B_t
T/s

CHANNEL NO. 4.2

MICROSECONDS

80.6 80.8 81.0 81.2 81.4 81.6 81.8 82.0

6111



18 12 6 0 6 12 18

D_w
 A/m^2

5-012

81.6

81.8

82.0

82.2

82.4

82.6

82.8

83.0

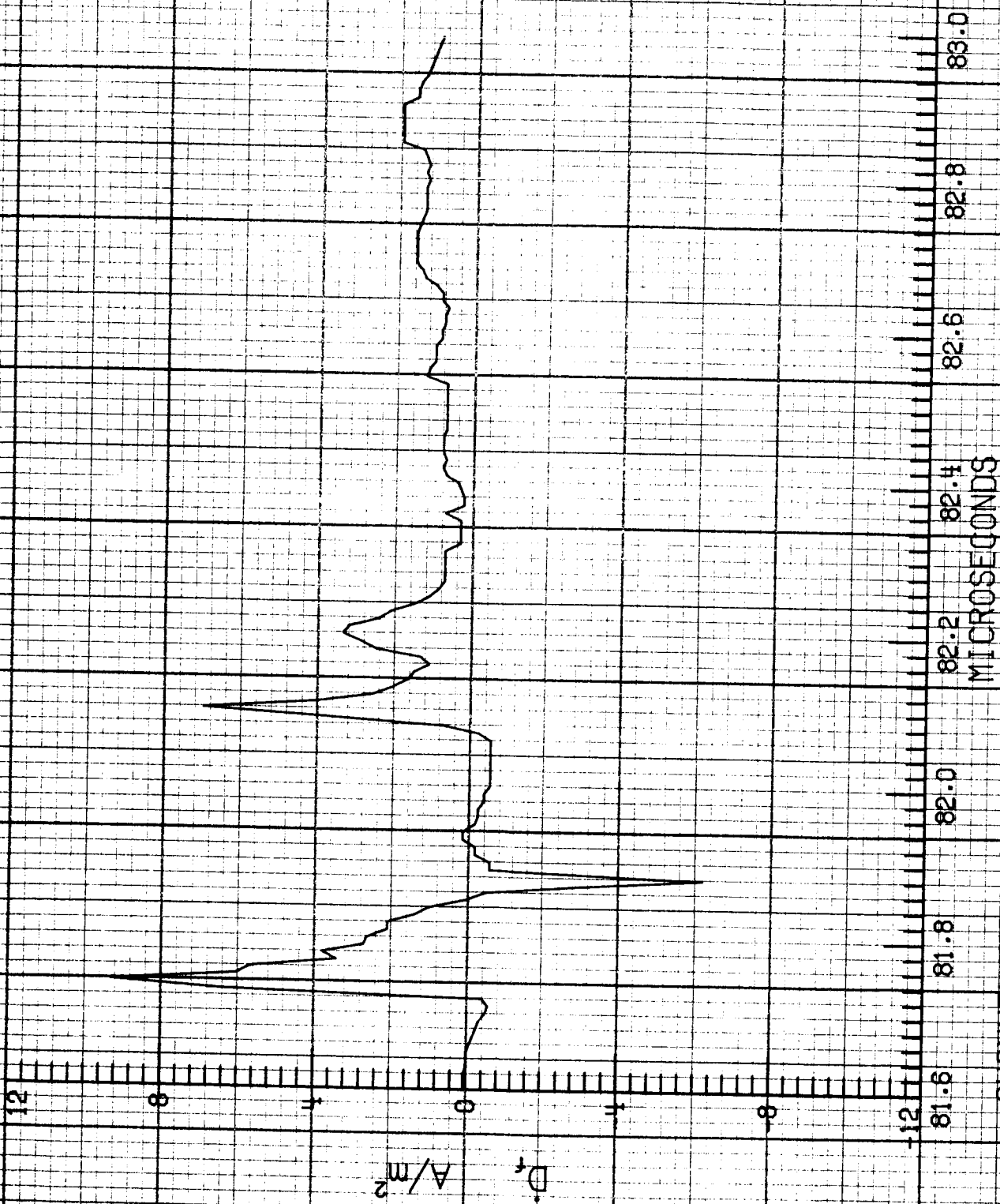
MICROSECONDS

CHANNEL NO. 3.1

1120

ORIGINAL PAGE IS
OF POOR QUALITY

S-012



CHANNEL NO. 3.2

1121

18

16

14

12

10

8

6

4

2

0

-2

-4

-6

-8

D_w
 A/m^2

5-012

1122

298.9

298.7

298.5

298.3

298.1

297.9

297.7

297.5

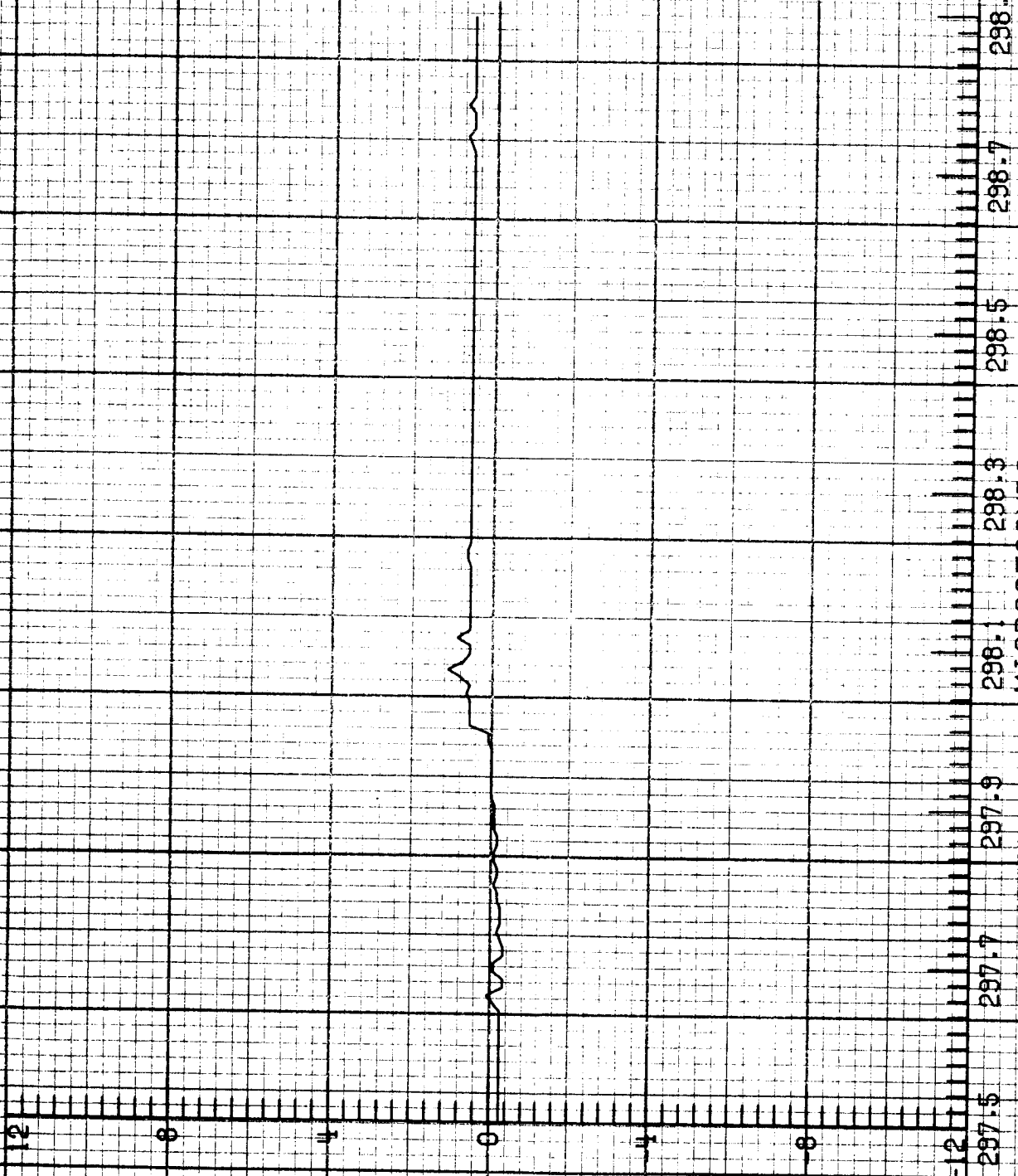
MICROSECONDS

CHANNEL NO. 3.1

ORIGINAL PAGE IS
OF POOR QUALITY

D-012

A/m^2



CHANNEL NO. 3.2

1123

TEST NO. 83-051

106 LIGHTNING/TK.S/M.THOMAS

5-012

900 600 300 0 300 600 900

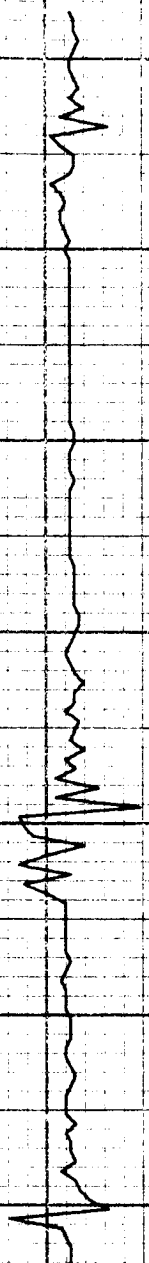
T/s

B_w

297.5 297.7 297.9 298.1 298.3 298.5 298.7 298.9

MICROSECONDS

CHANNEL NO. 4.0



ORIGINAL PAGE IS
OF POOR QUALITY

2-012

DB
T/S

300 600 300 0 300 600 300

CHANNEL NO. 4.1

MICROSECONDS

297.5 297.7 297.9 298.1 298.3 298.5 298.7 298.9

300 600 300 0 300 600 -300

B_1 T/s

297.5 297.7 297.9 298.1 298.3 298.5 298.7 298.9

MICROSECONDS

CHANNEL NO. 4.2

0-012

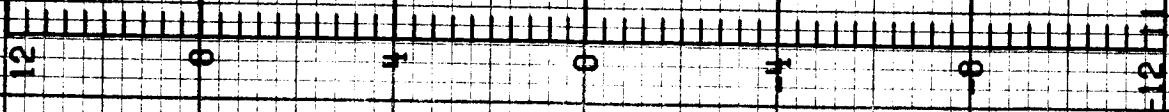
1.26

5000 2000 1000 500 200 100 50 20 10 5 2 1

ORIGINAL PAGE IS
OF POOR QUALITY

F106 LIGHTNING/TK-3/M-THOMAS

N-001



D_t
 A/m^2

MICROSECONDS

CHANNEL NO. 2.0

83.1

82.9

82.7

82.5

82.3

82.1

81.9

81.7

1128

$\times 10^{10}$

24

16

8

0

0

16

24

A/s

I.

N-001

83.1

82.9

82.7

82.5

82.3

82.1

81.9

81.7

MICROSECONDS

CHANNEL NO. 2.1

1500
1000
500
0
-500
-1000
-1500

T/s

N-001

81.7 81.9 82.1 82.3 82.5 82.7 82.9 83.1

MICROSECONDS

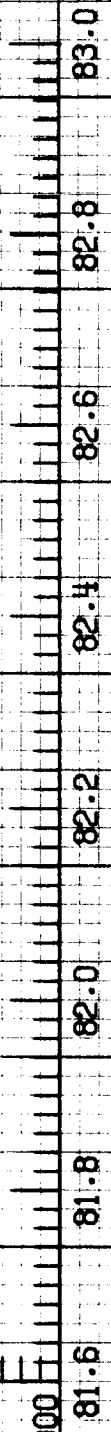
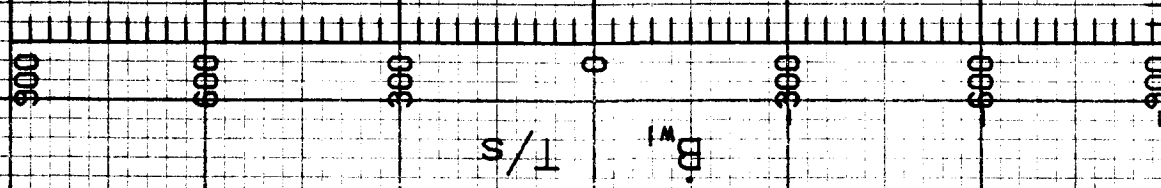
CHANNEL NO. 2.2

1129

TEST NO. 83-050

F106 LIGHTNING/TK.S/M. THOMAS

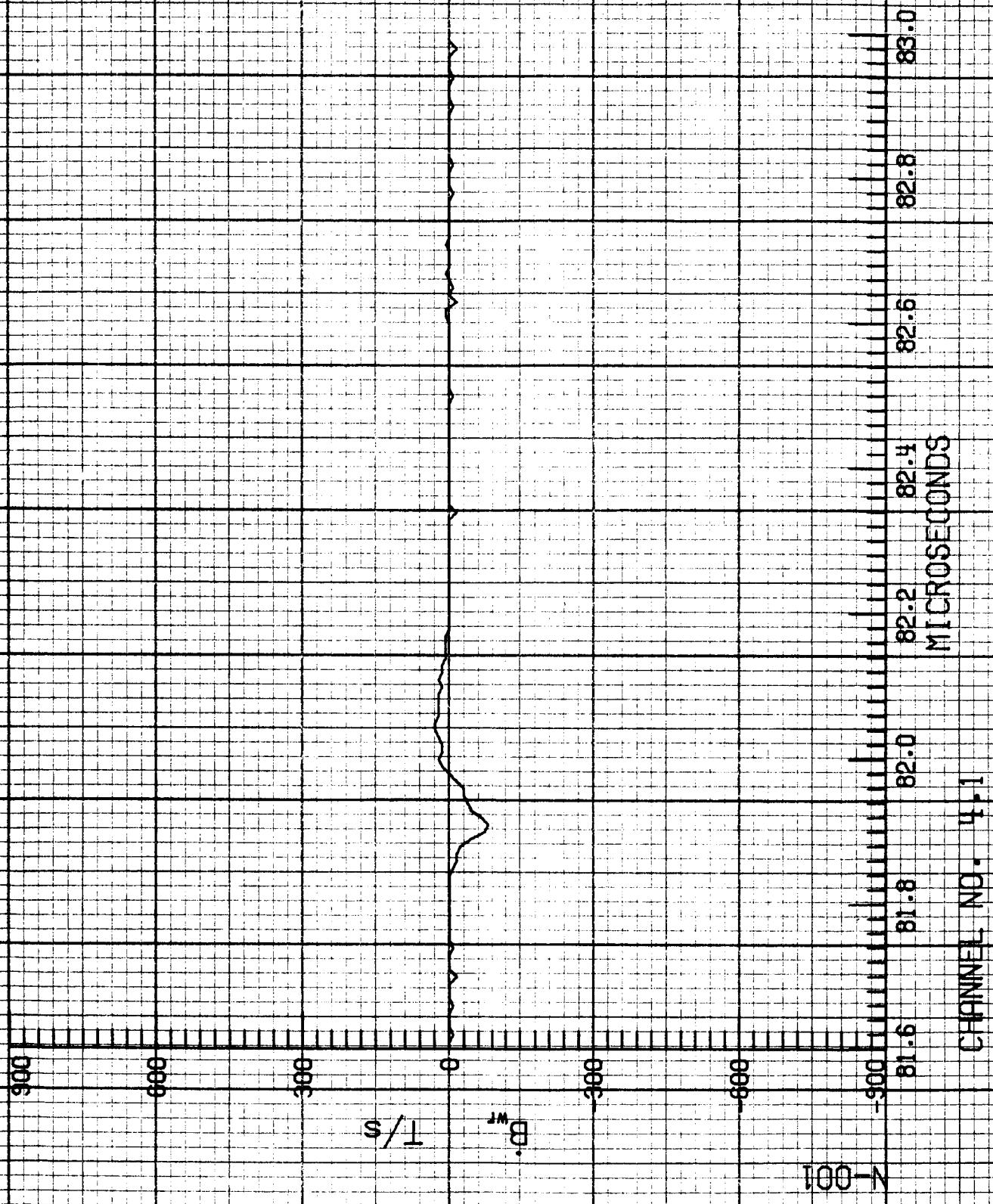
N-001



CHANNEL NO. 4.0

1130

ORIGINAL PAGE IS
OF POOR QUALITY



CHANNEL NO. 4.1

N-001

B_t
T/s

900
600
300
0
300
600
900

81.6

81.8

82.0

82.2

82.4

82.6

82.8

83.0

MICROSECONDS

CHANNEL NO. 4.2

1132

ORIGINAL PAGE IS
OF POOR QUALITY

F106 LIGHTNING/TK-3/M. THOMAS

S-023

TEST NO. 83-050

12

D_t
 A/m^2

12

81.7

81.9

82.1

82.3

82.5

82.7

82.9

83.1

MICROSECONDS

CHANNEL NO. 2.0

133

$\times 10^{10}$

24

16

8

A/s

.1

8

16

5-023

24

81.7

81.9

82.1

82.3

82.5

82.7

82.9

83.1

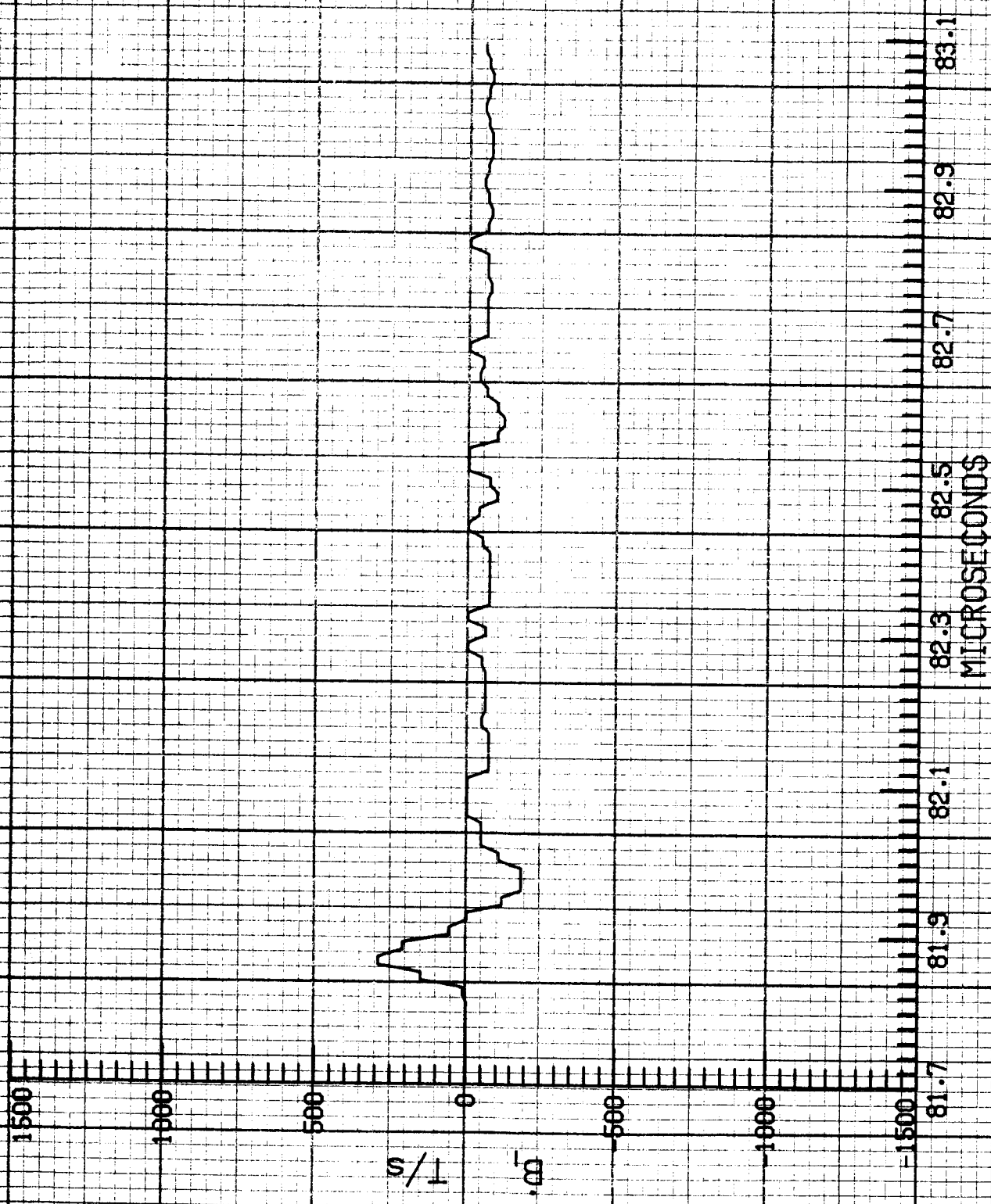
MICROSECONDS

CHANNEL NO. 2.1

1134

ORIGINAL PAGE IS
OF POOR QUALITY

5-023



CHANNEL NO. 2.2

1135

TEST NO. 83-050

F106 LIGHTNING/TK.5/M. THOMAS

5-023

900
600
300
0
300
600
900

T/s
B_w

81.6

81.8

82.0

82.2

82.4

82.6

82.8

83.0

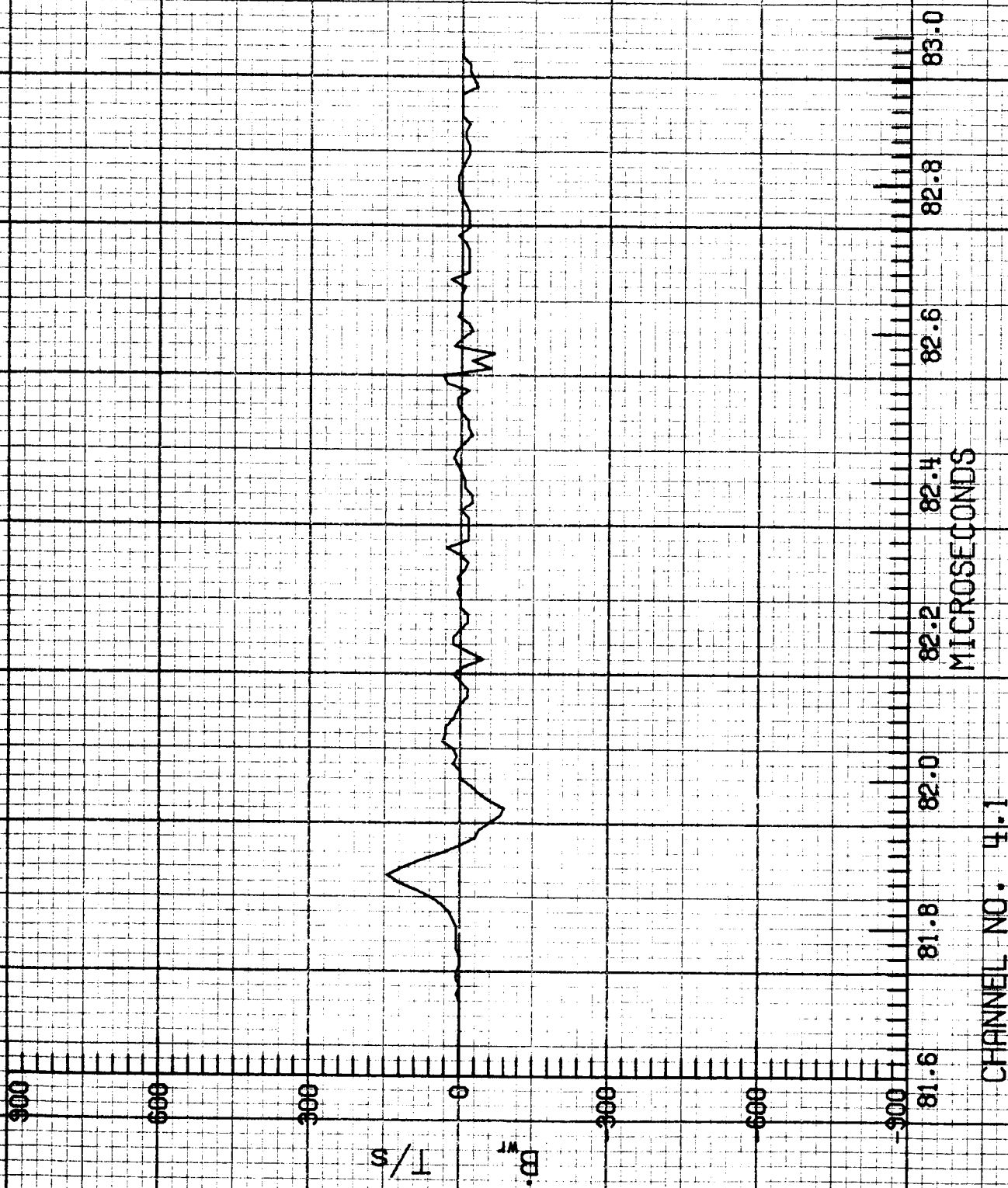
MICROSECONDS

CHANNEL NO. 4.0

136

ORIGINAL PAGE IS
OF POOR QUALITY

5-023



CHANNEL NO. 4.1

300
600
300
0
300
600
-300

B_t
T/s

0-023

81.6 81.8 82.0 82.2 82.4 82.6 82.8 83.0

MICROSECONDS

CHANNEL NO. 4.2

1138

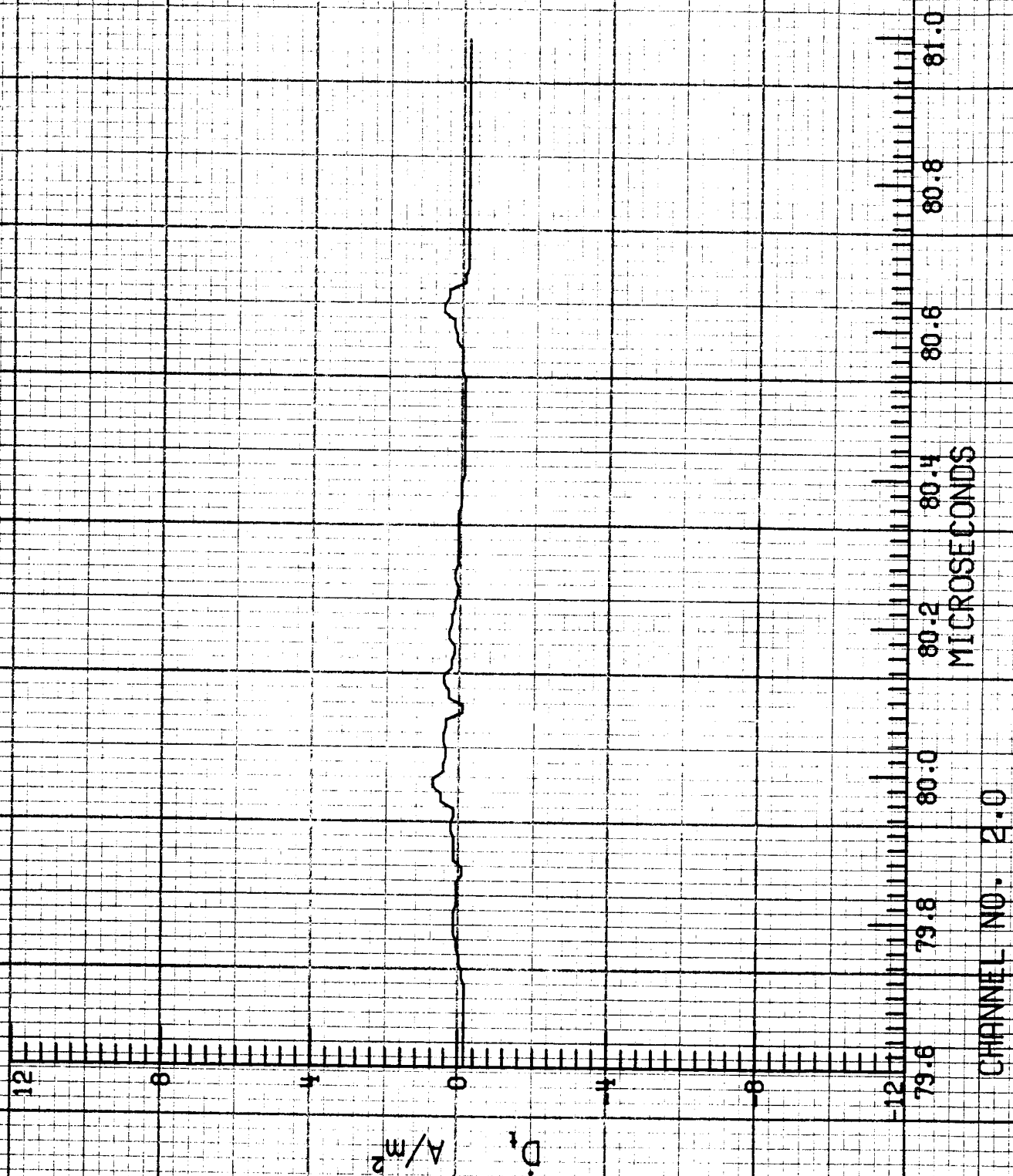


ORIGINAL PAGE IS
OF POOR QUALITY

F106 LIGHTNING/TK-3/M-THOMAS

3-026

TEST NO. 83-050



CHANNEL NO. 2.0

$\times 10^{10}$

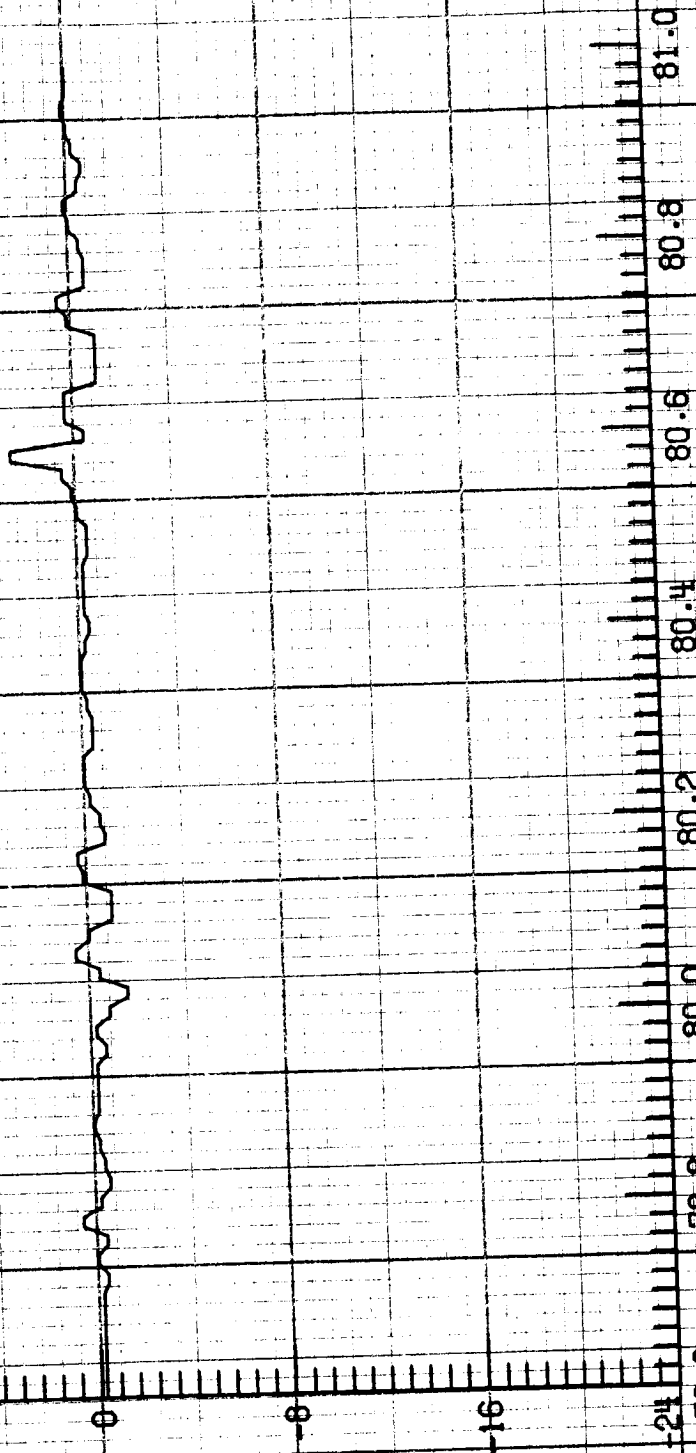
I
A/s

DP-026

CHANNEL NO. 2.1

MICROSECONDS

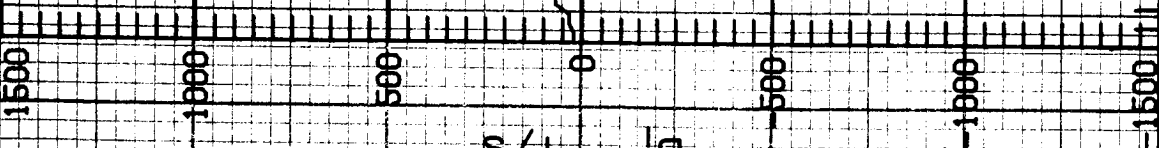
1140



ORIGINAL PAGE IS
OF POOR QUALITY

5-026

T/s
0.01



79.6

79.8

80.0

80.2

80.4

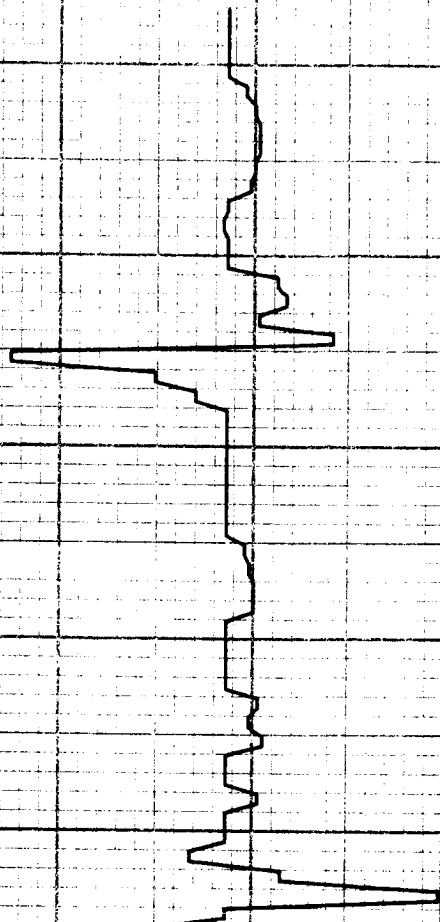
80.6

80.8

81.0

MICROSECONDS

CHANNEL NO. 2.2

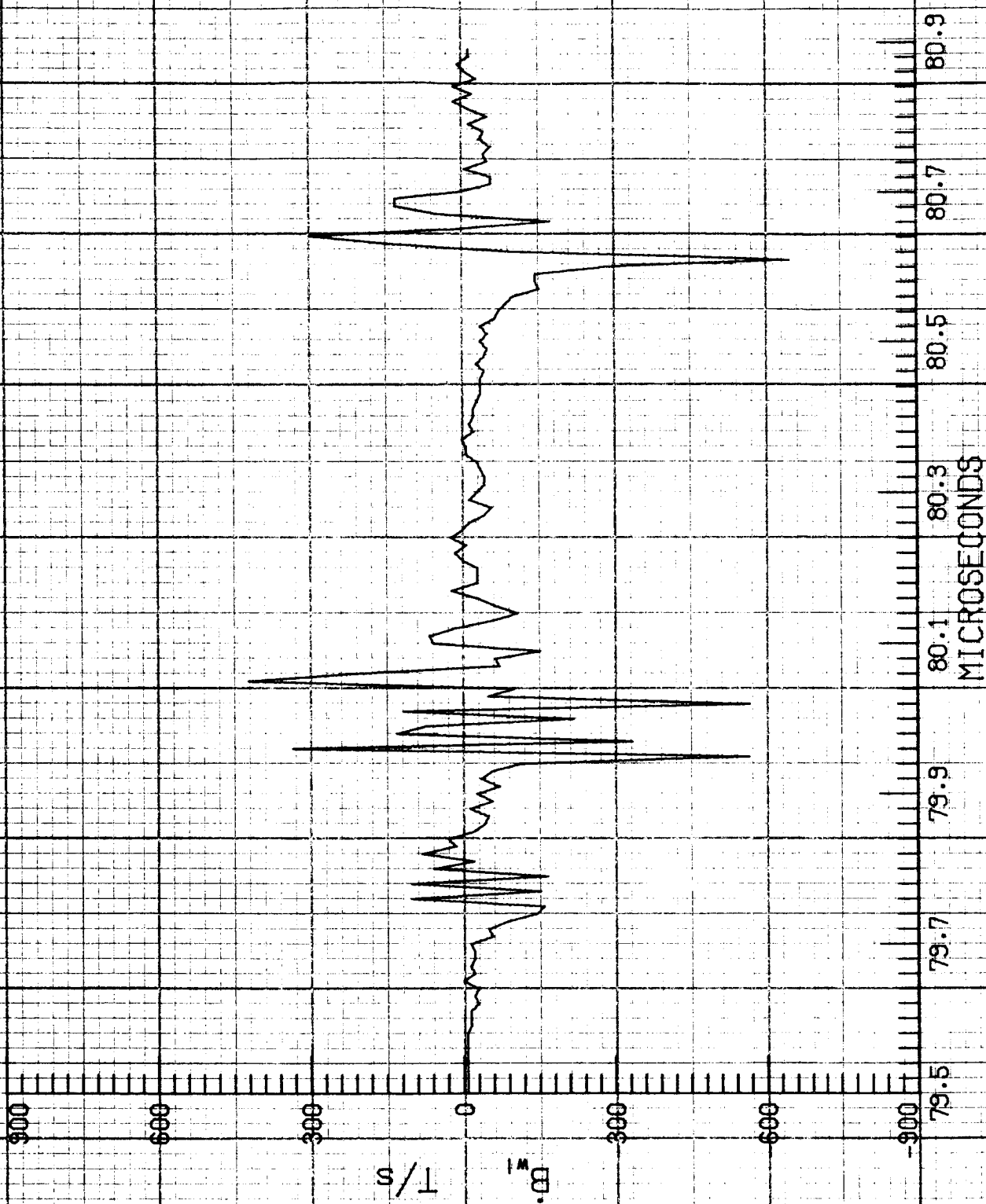


1141

TEST NO. 83-05

F106 LIGHTNING/TK.S/M. THOMAS

S-026



CHANNEL NO. 4.0

1142

ORIGINAL PAGE IS
OF POOR QUALITY

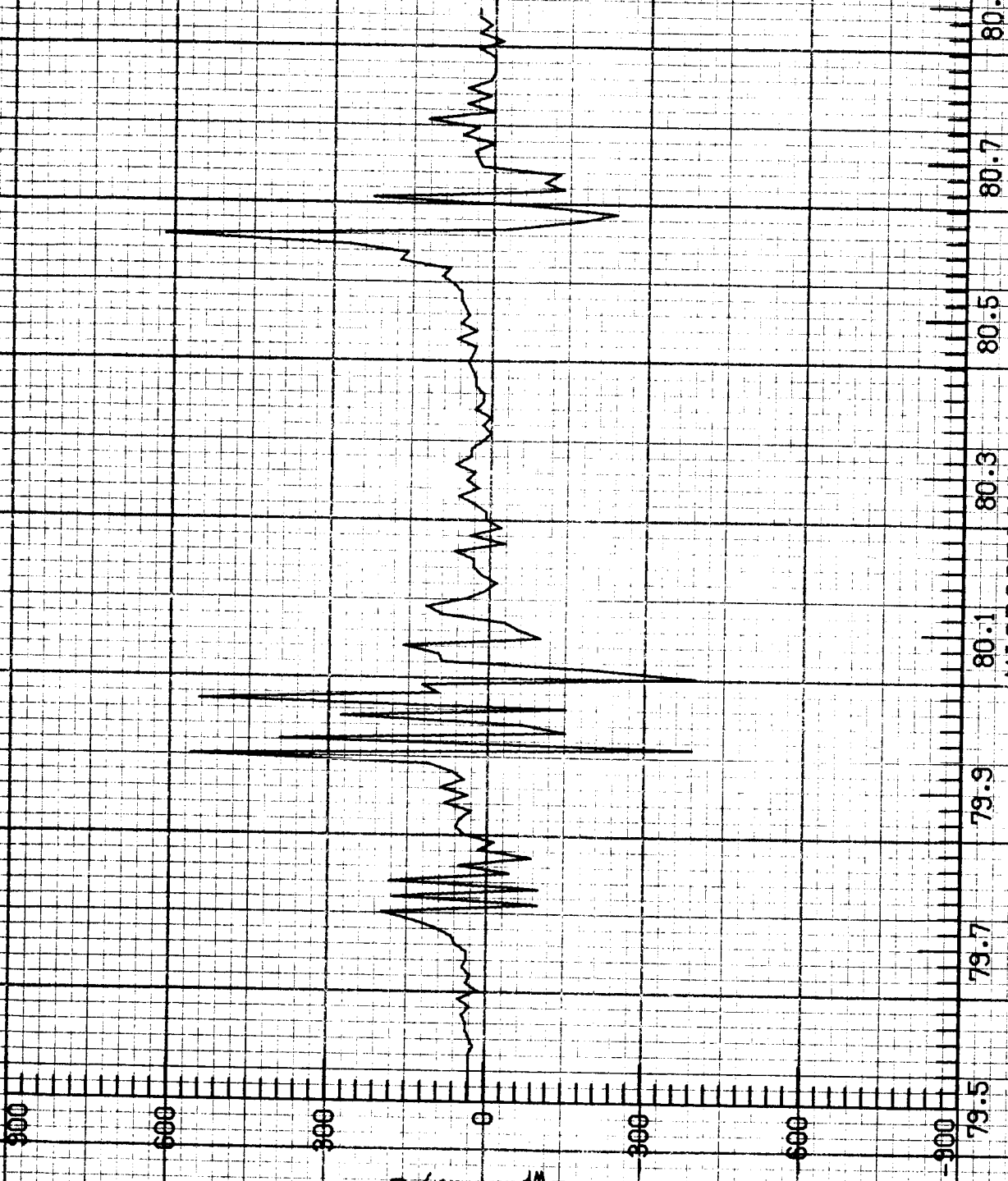
B-026

B_{WT}
T/s

79.5 79.7 79.9 80.1 80.3 80.5 80.7 80.9
MICROSECONDS

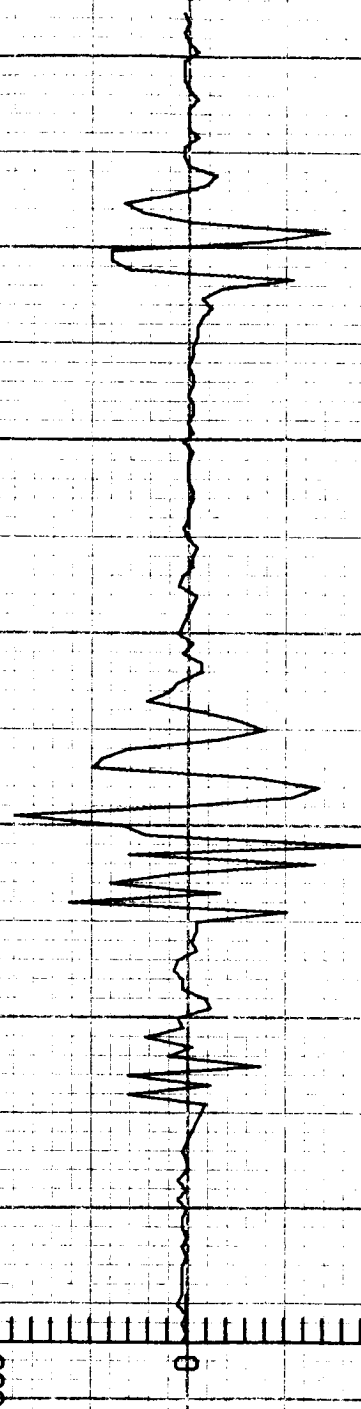
CHANNEL NO. 4.1

1143



5-026

B_t
T/s



MICROSECONDS

CHANNEL NO. 4.2

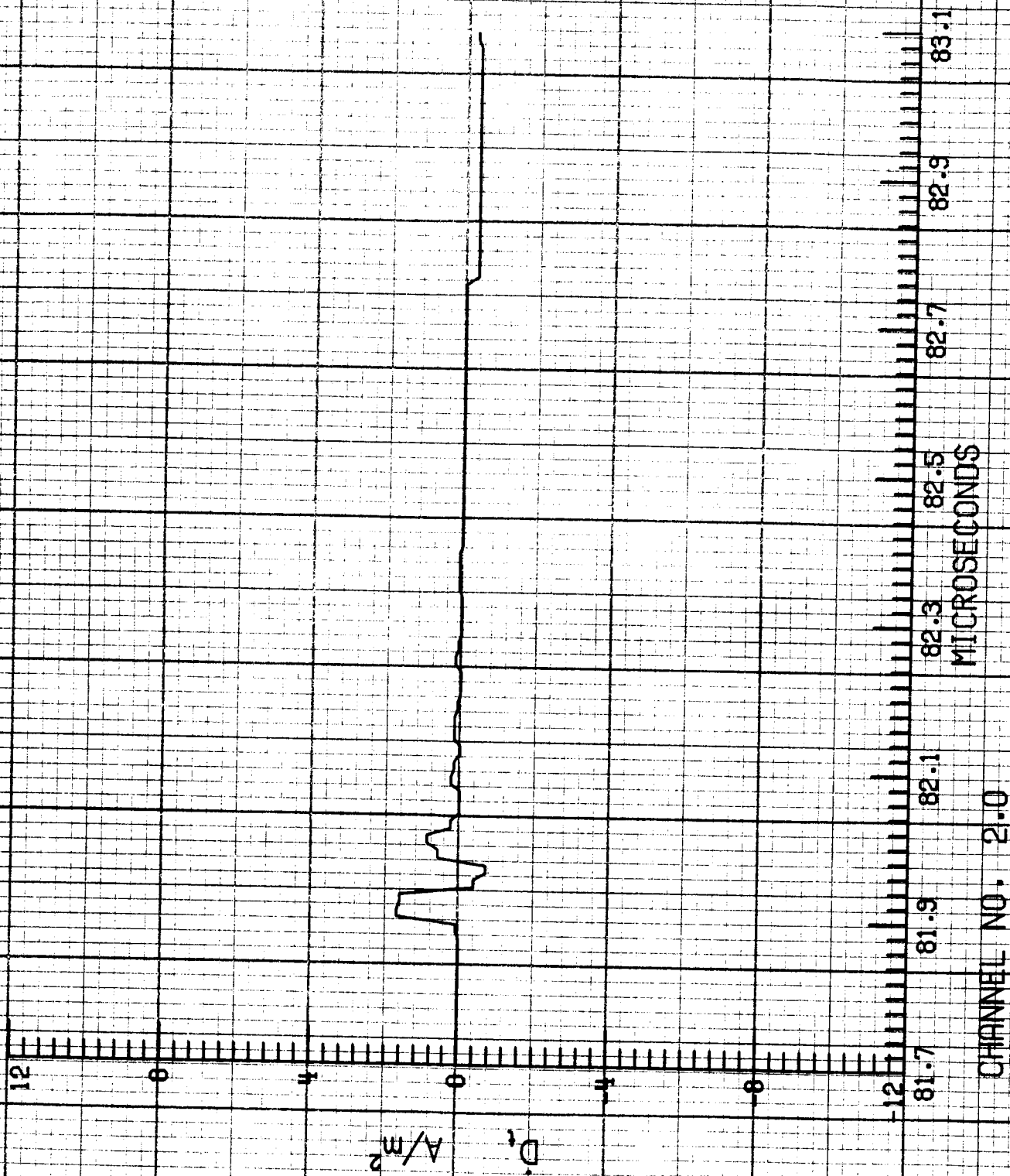
1144

ORIGINAL PAGE IS
OF POOR QUALITY

F106 LIGHTNING/TK-3/M-THOMAS

S-027

TEST NO. 83-050



CHANNEL NO. 2.0

$\times 10^{10}$

24

16

8

0

-8

-16

-24

A/s

I.

S-027

81.7

81.9

82.1

82.3

82.5

82.7

82.9

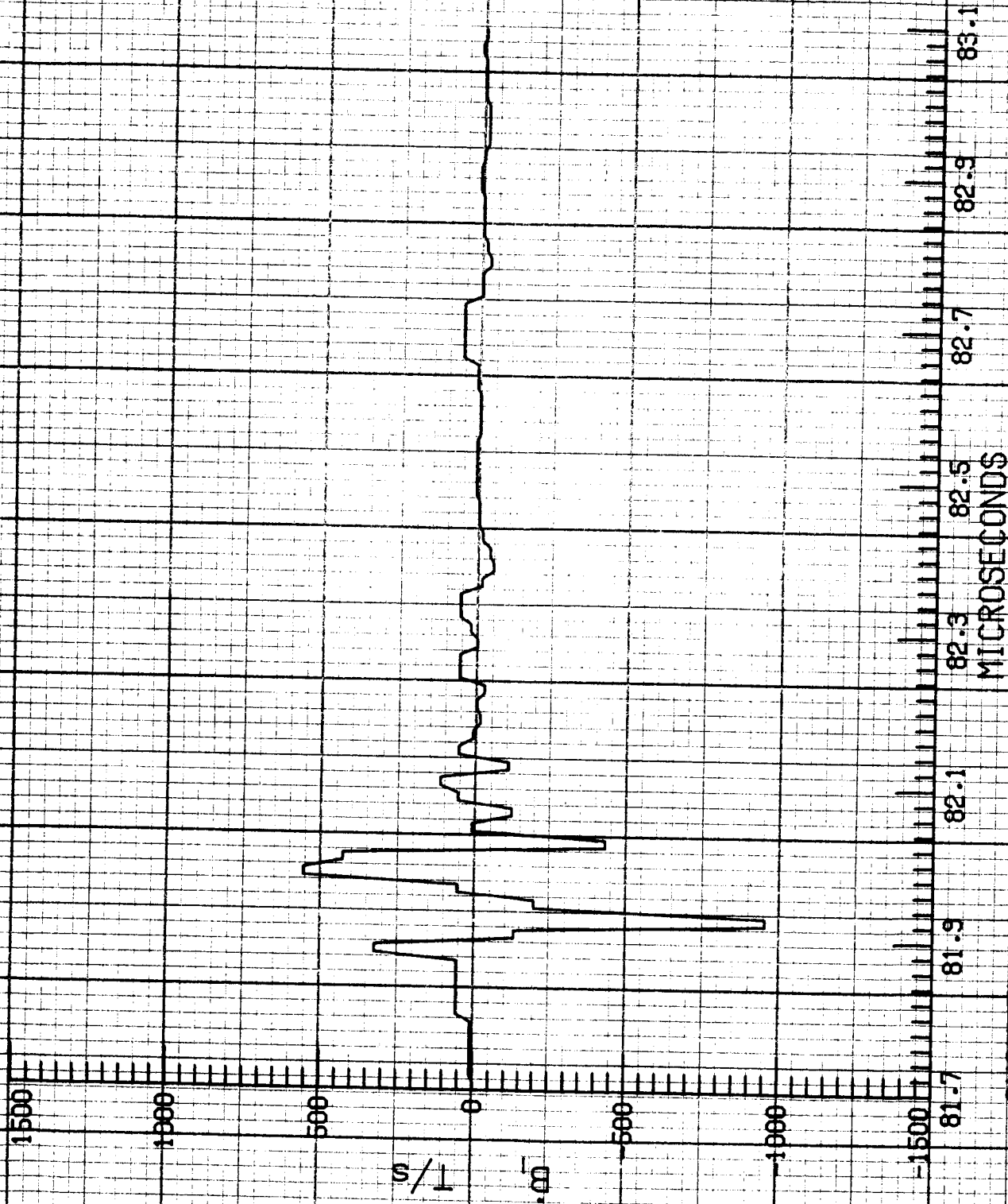
83.1

MICROSECONDS

CHANNEL NO. 2.1

ORIGINAL PAGE IS
OF POOR QUALITY

5-027



CHANNEL NO. 2.2

18

12

6

0

-6

-12

-18

81.6

81.8

82.0

82.2

82.4

82.6

82.8

83.0

MICROSECONDS

CHANNEL NO. 3.1

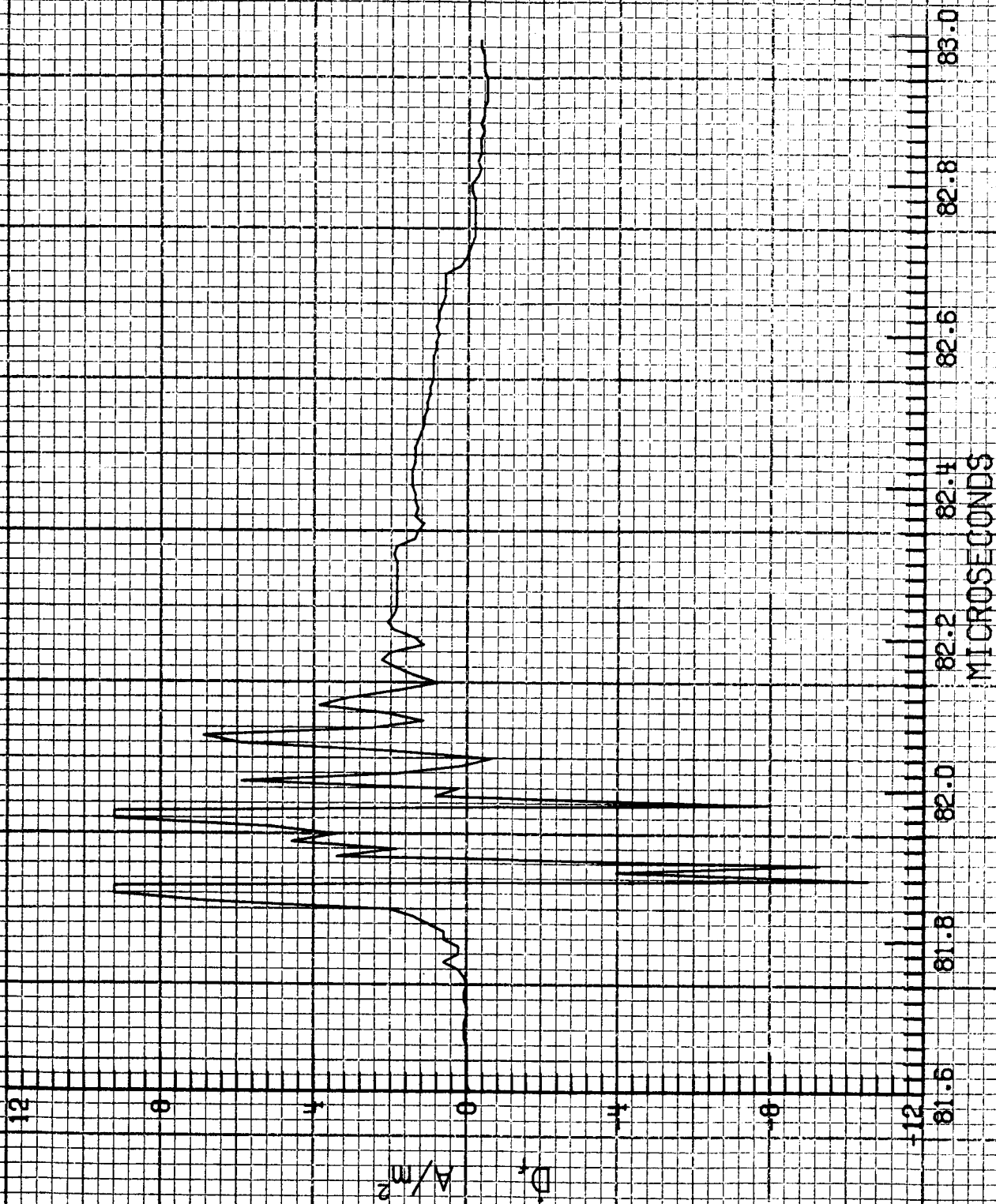
A/m^2

D_w

0-027

1.48

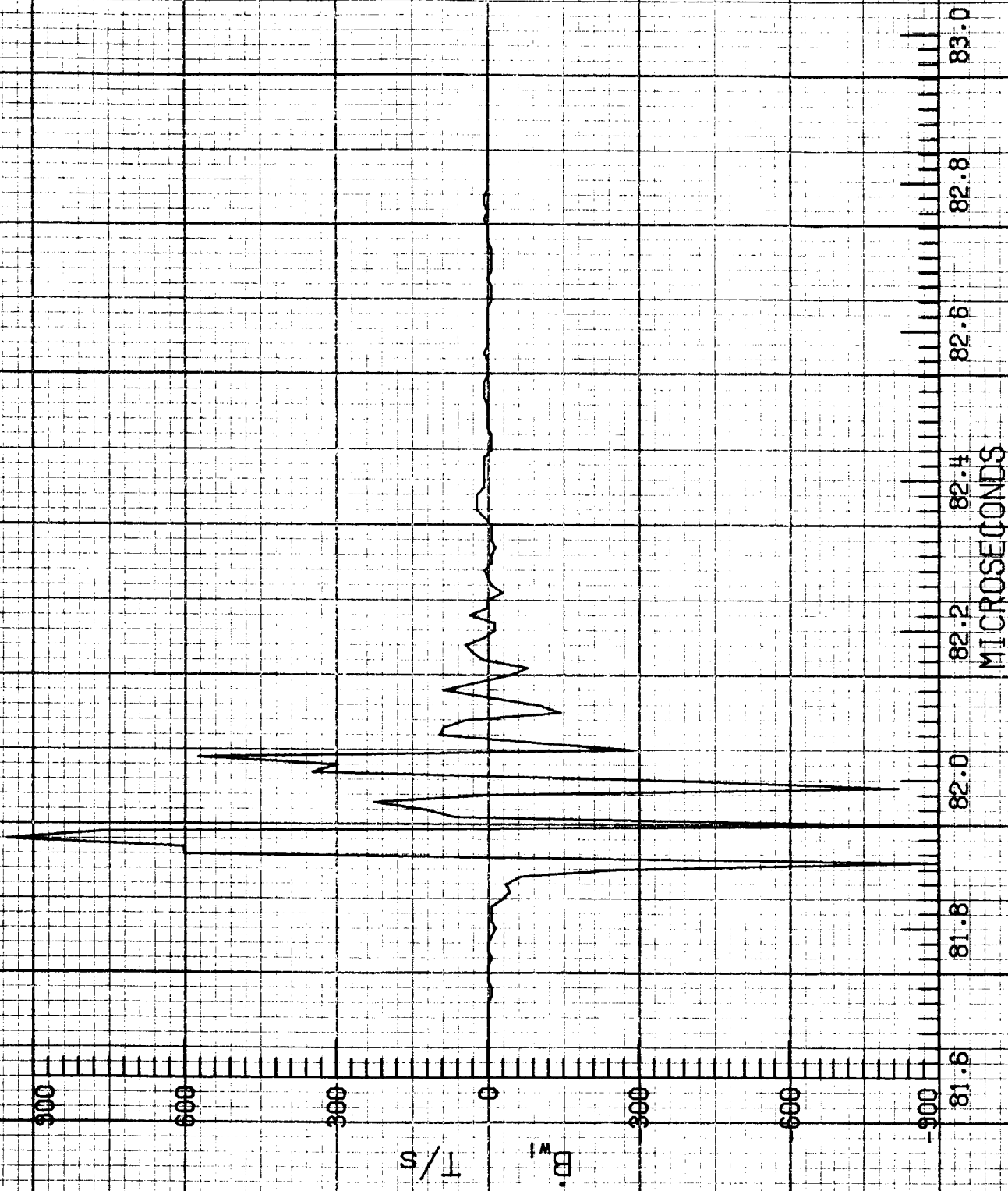
ORIGINAL PAGE IS
OF POOR QUALITY



TEST NO. 83-050

F106 LIGHTNING/TK.S/M. THOMAS

5-027

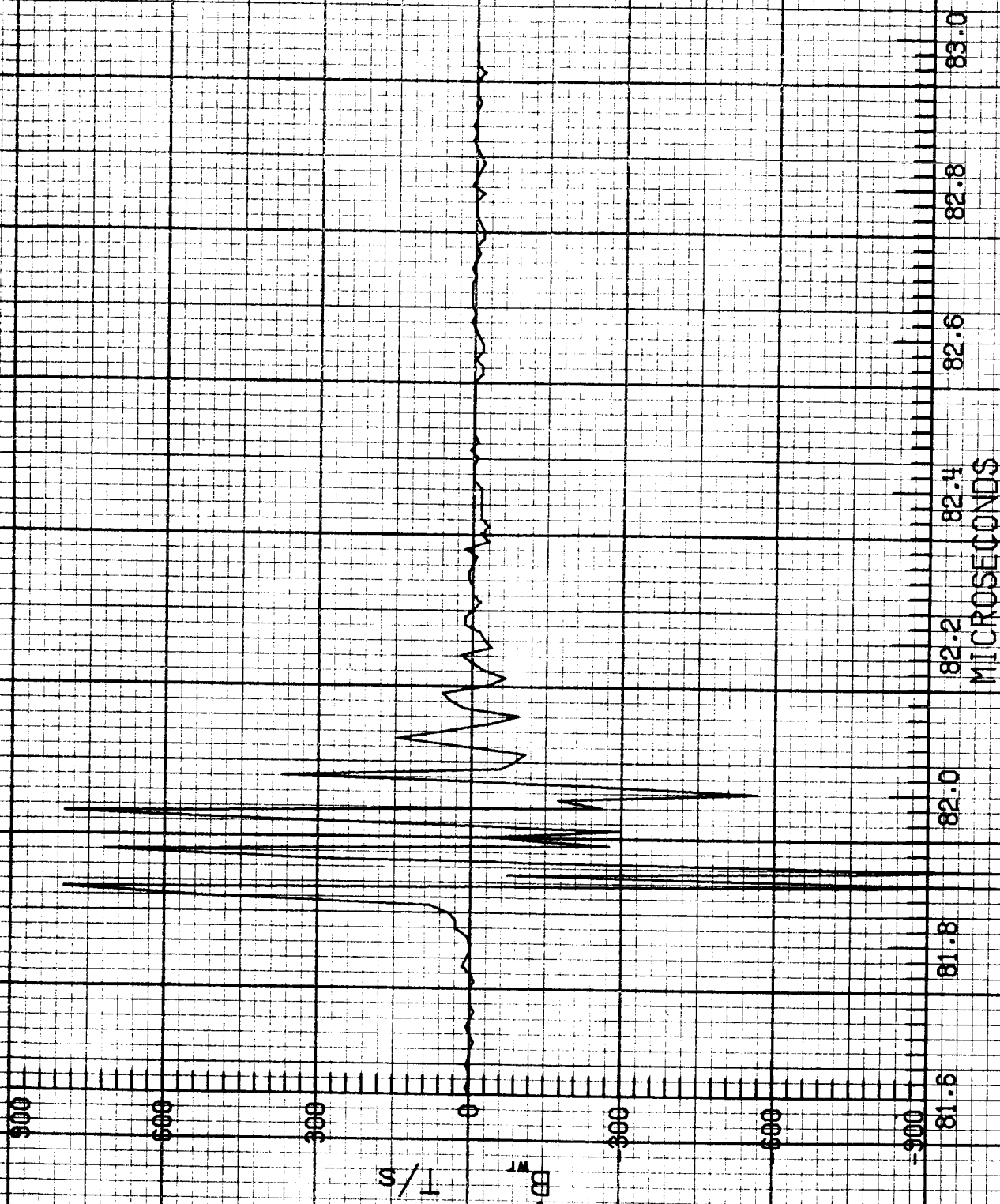


CHANNEL NO. 4.0

1150

ORIGINAL PAGE IS
OF POOR QUALITY

S-027



CHANNEL NO. 11.1

1151

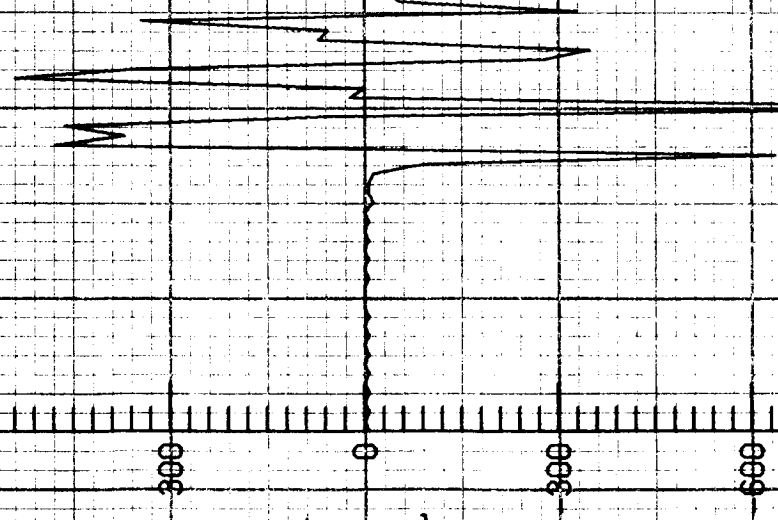
S-027

CHANNEL NO. 4.2

MICROSECONDS

81.6 81.8 82.0 82.2 82.4 82.6 82.8 83.0

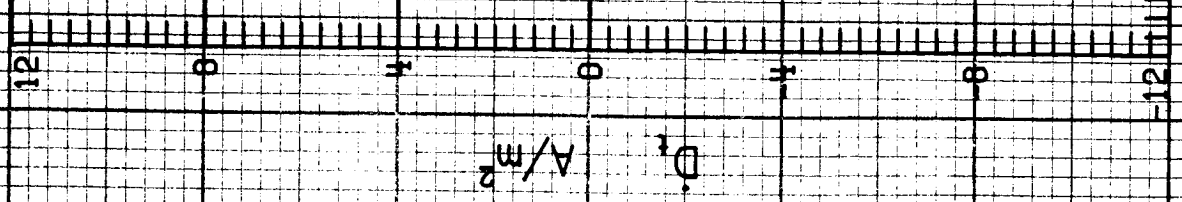
B_t
T/s



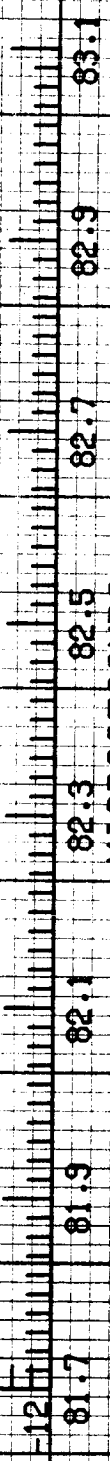
TEST NO. 83-050

F106 LIGHTNING/TK-3/M. THOMAS

S-033



ORIGINAL PAGE IS
OF POOR QUALITY



CHANNEL NO. 2.0

1153

$\times 10^{10}$

24

16

8

A/s

1.1

0

16

24

81.7

81.9

82.1

82.3

82.5

82.7

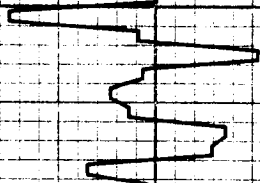
82.9

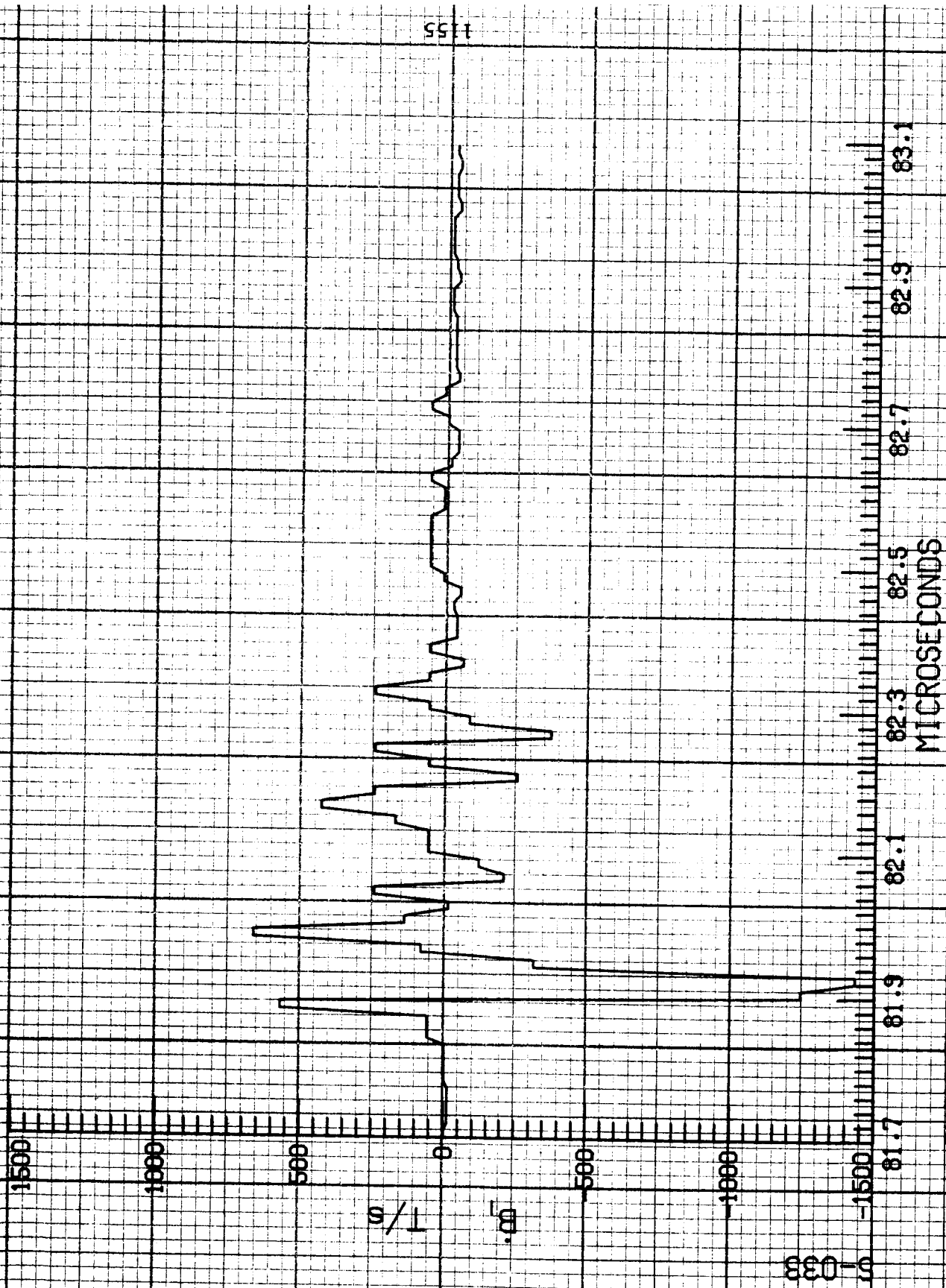
83.1

MICROSECONDS

CHANNEL NO. 2.1

5-038

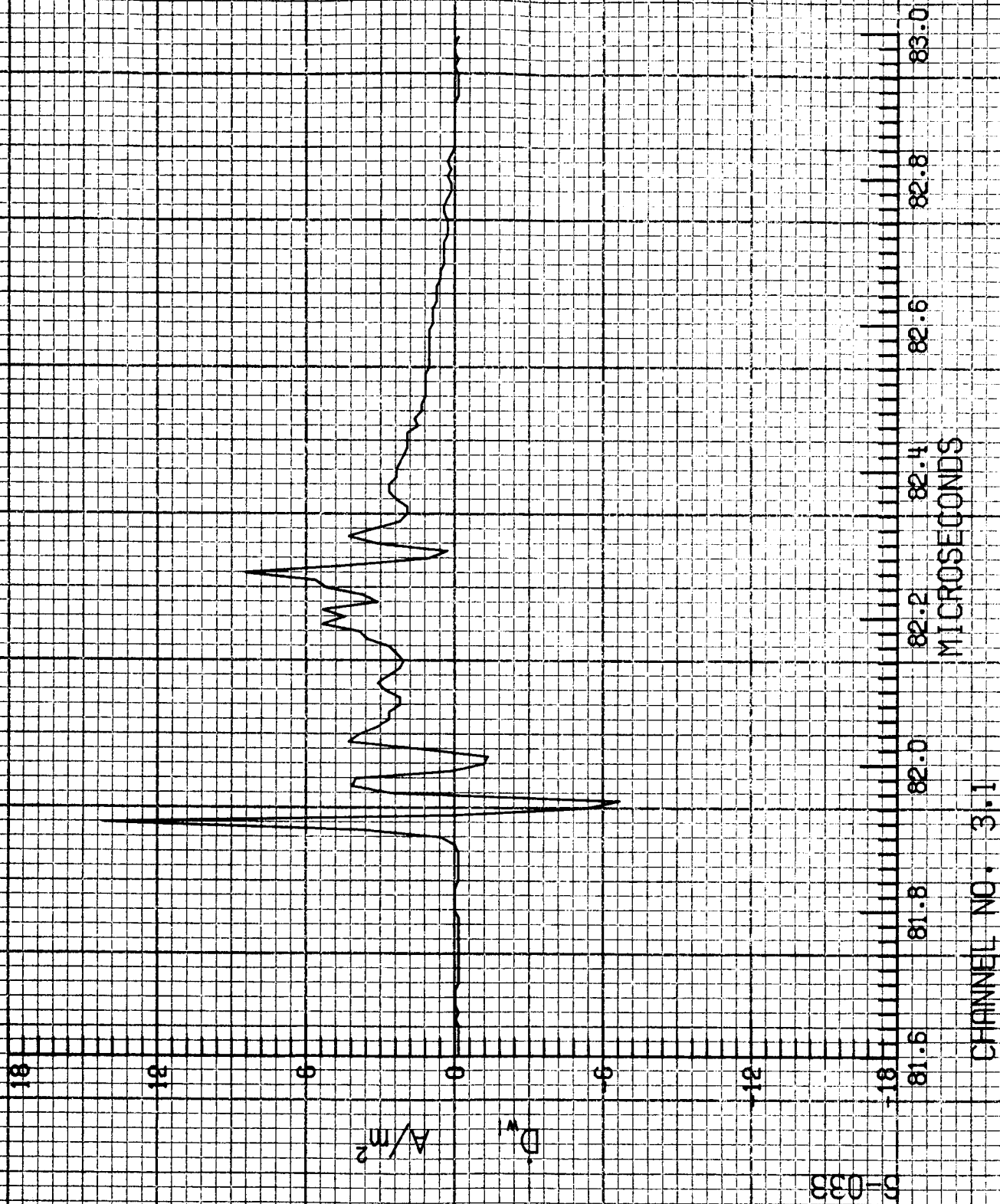




CHANNEL NO. 2.2

1.55

ORIGINAL PAGE IS
OF POOR QUALITY



S-038

12 8 4 0 4 8 12

A/m^2

D_r

81.6

81.8

82.0

82.2

82.4

82.6

82.8

83.0

MICROSECONDS

CHANNEL NO. 3.2

1157

TFST NO. 83-05

F106 LIGHTNING/TK.5/M. THOMAS

5-033

900
600
300
0
300
600
900

B_w
T/s

81.6
81.8
82.0
82.2
82.4
82.6
82.8
83.0

MICROSECONDS

CHANNEL NO. 41.0

1158

ORIGINAL PAGE IS
OF POOR QUALITY

S-033

B_w
T/s

300 600 300 0 300 600 -300

81.6

81.8

82.0

82.2

82.4

82.6

82.8

83.0

MICROSECONDS

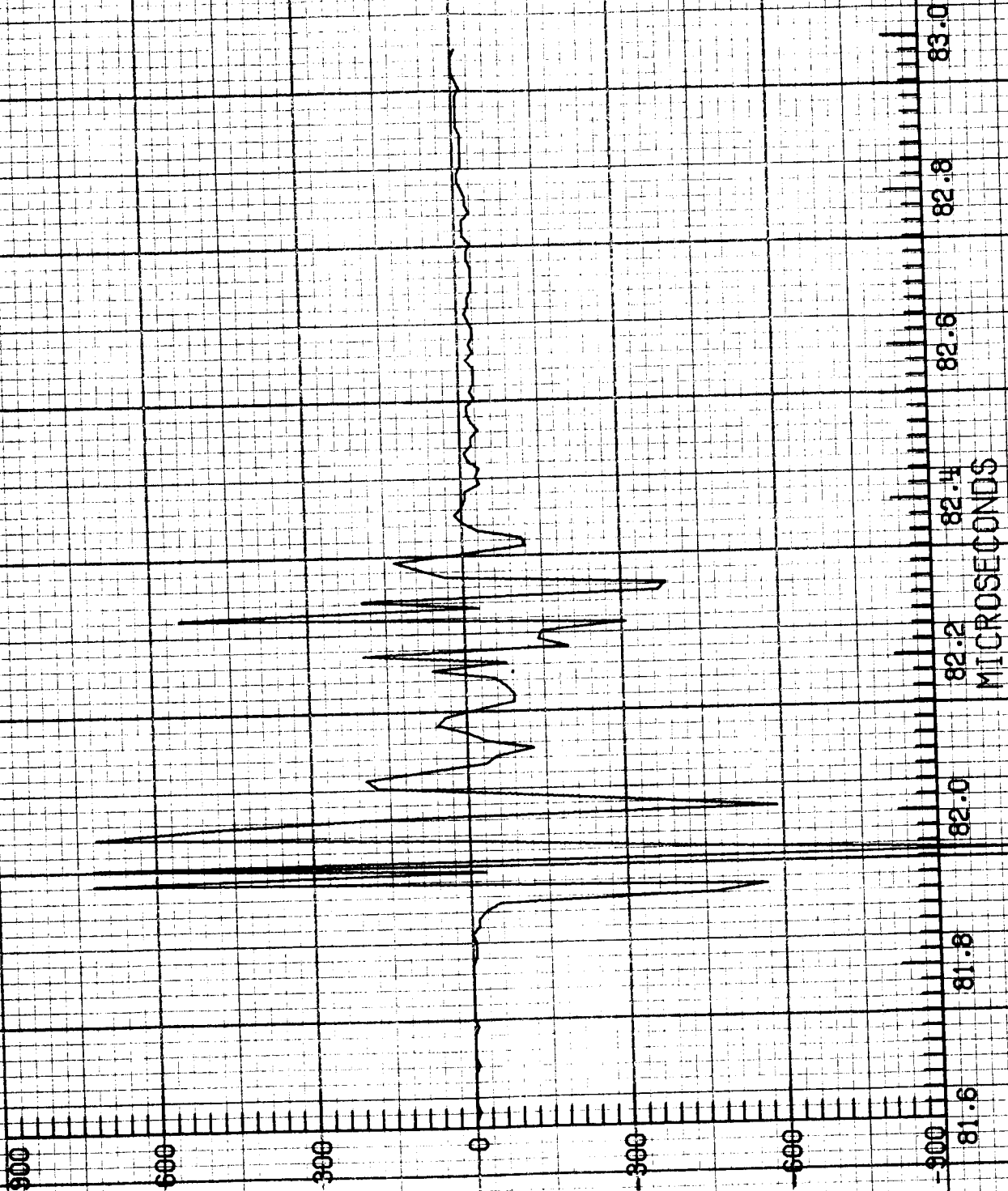
CHANNEL NO. 4.1

1.59

1160

0-033

B_t
I/s

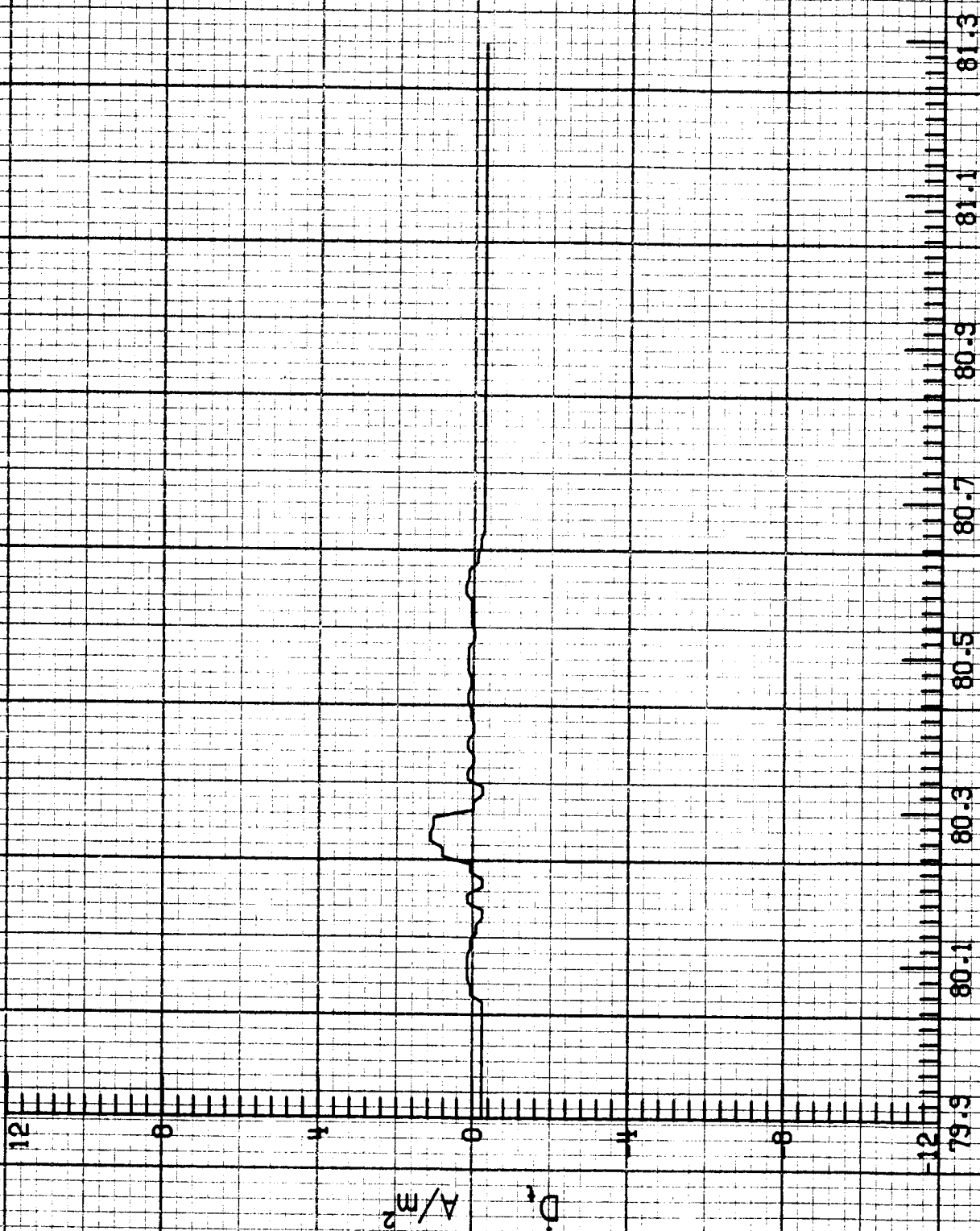


CHANNEL NO. 4:2

TEST NO. 83-050

F106 LIGHTNING/TK-3/M-THOMAS

S-035



CHANNEL NO. 2-0

$\times 10^{10}$

24

16

8

0

-8

-16

-24

A/s

I.

9-035

79.9

80.1

80.3

80.5

80.7

80.9

81.1

81.3

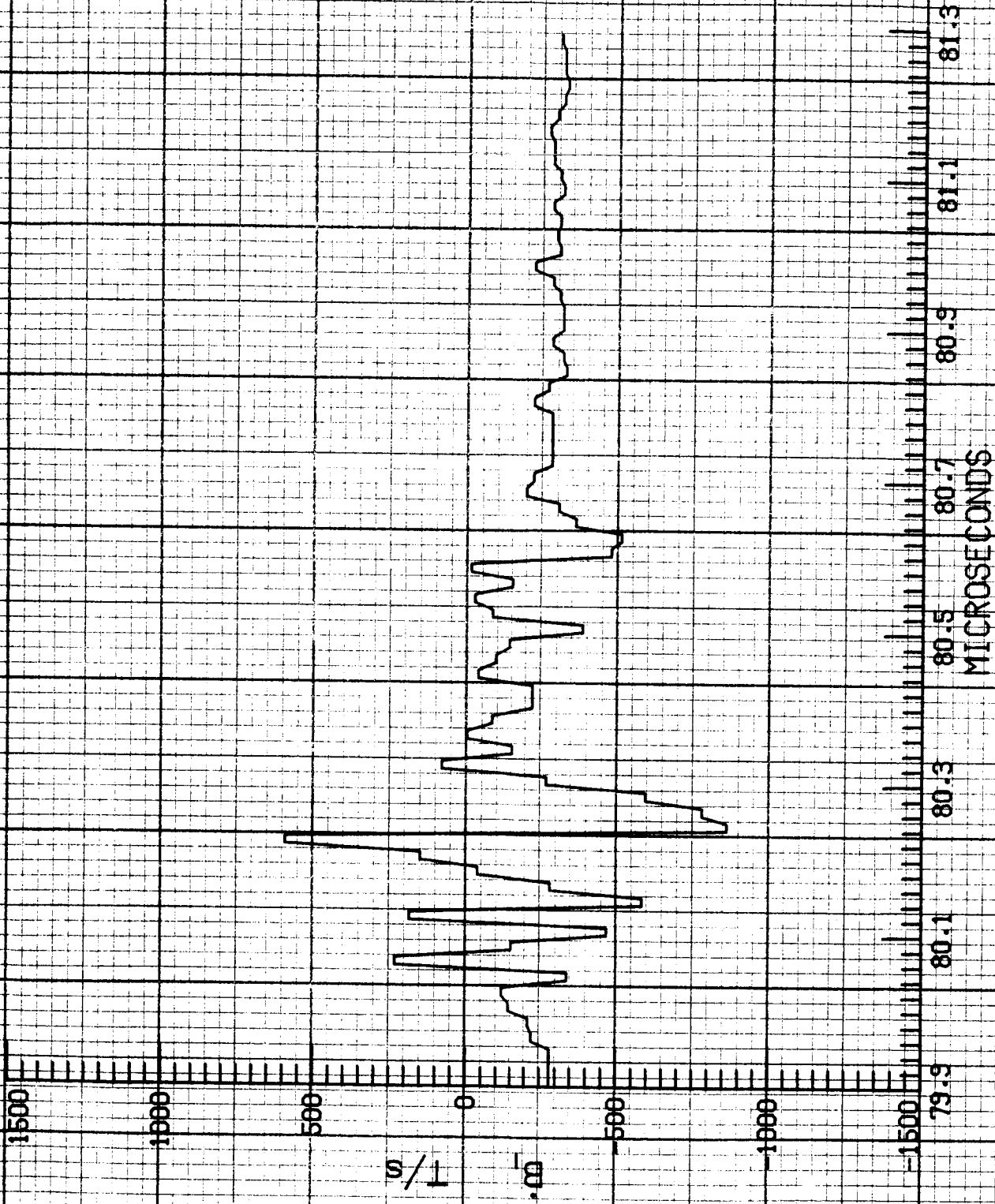
MICROSECONDS

CHANNEL NO. 2.1

1162

ORIGINAL PAGE IS
OF POOR QUALITY

S-035

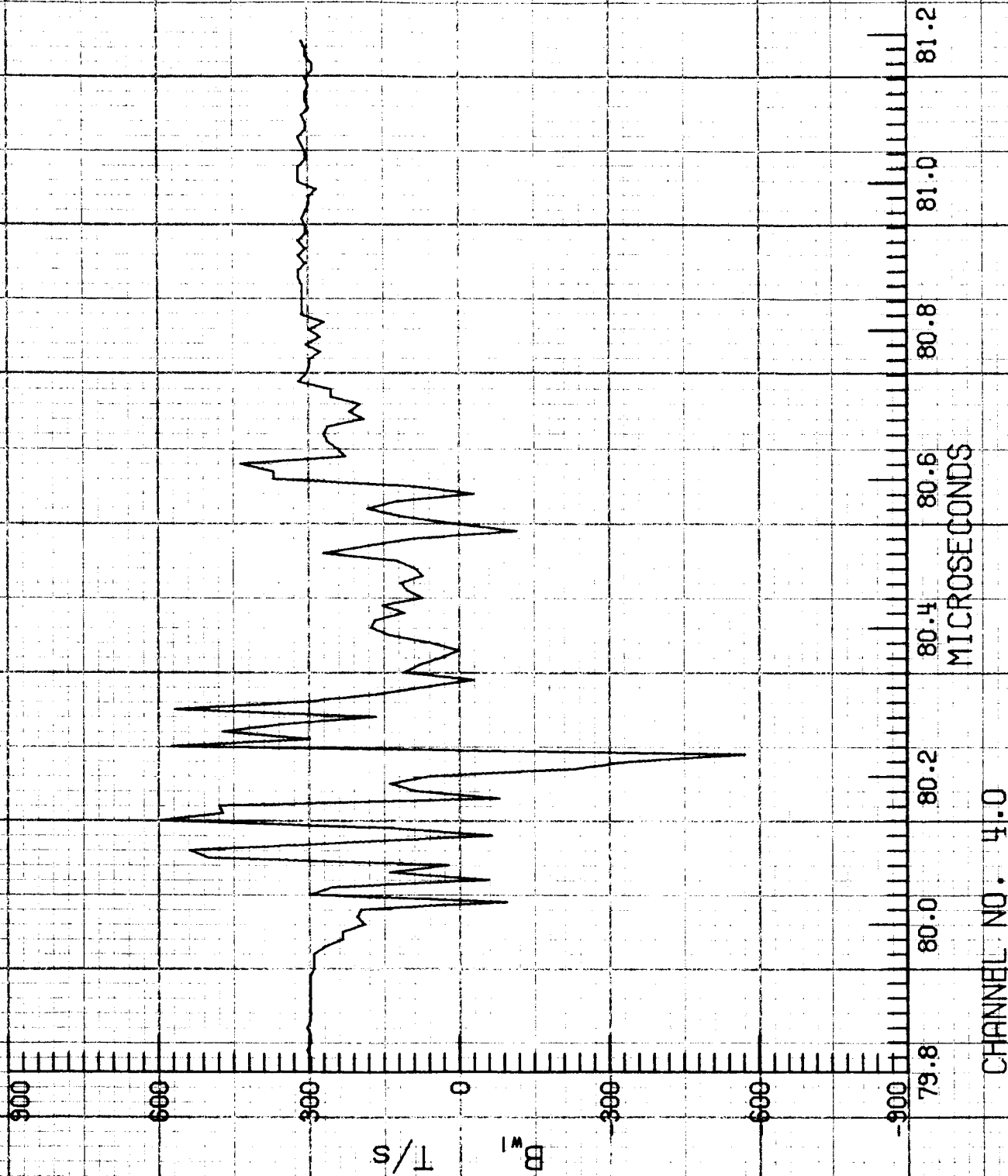


CHANNEL NO. 2.2

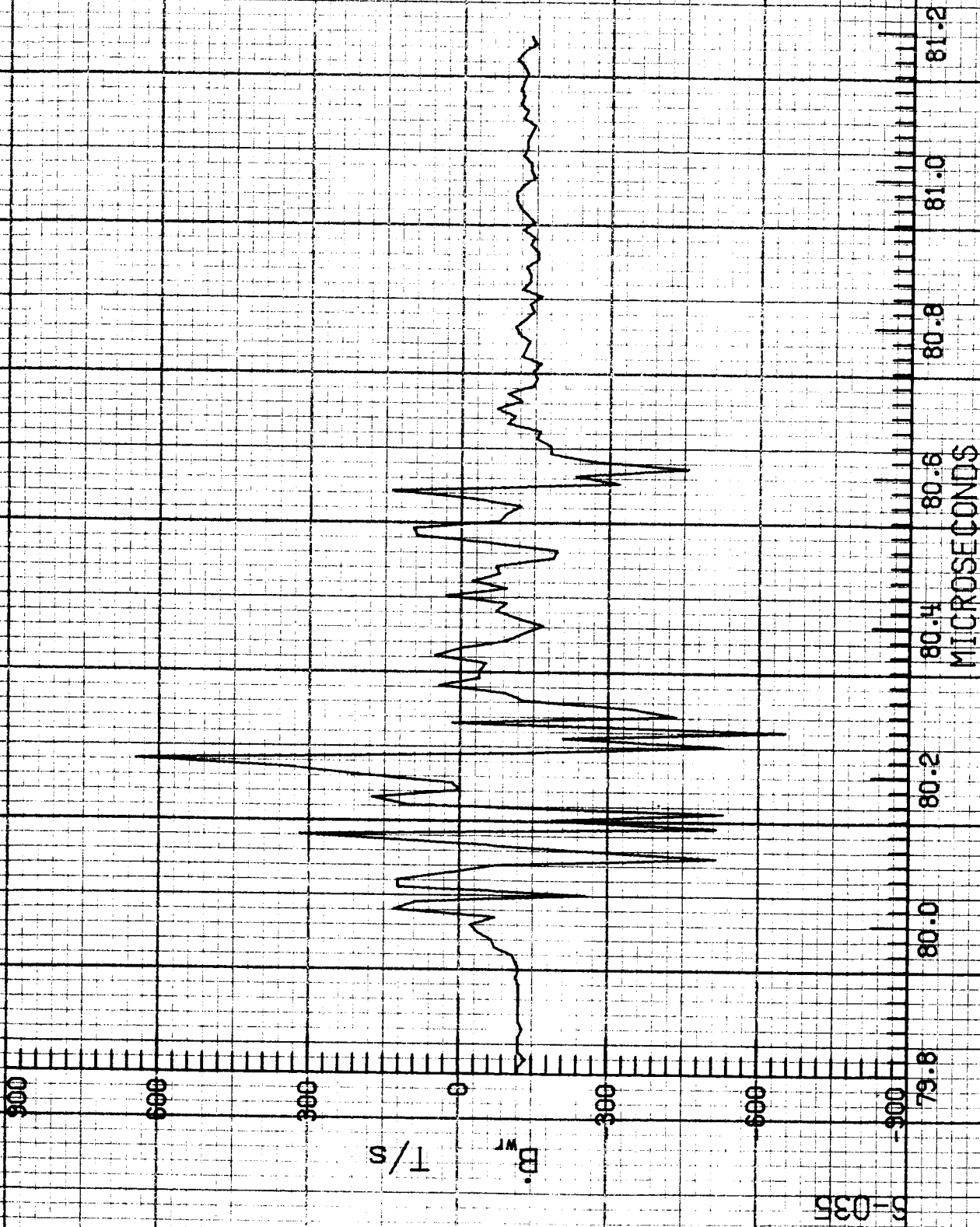
TEST NO. 83-050

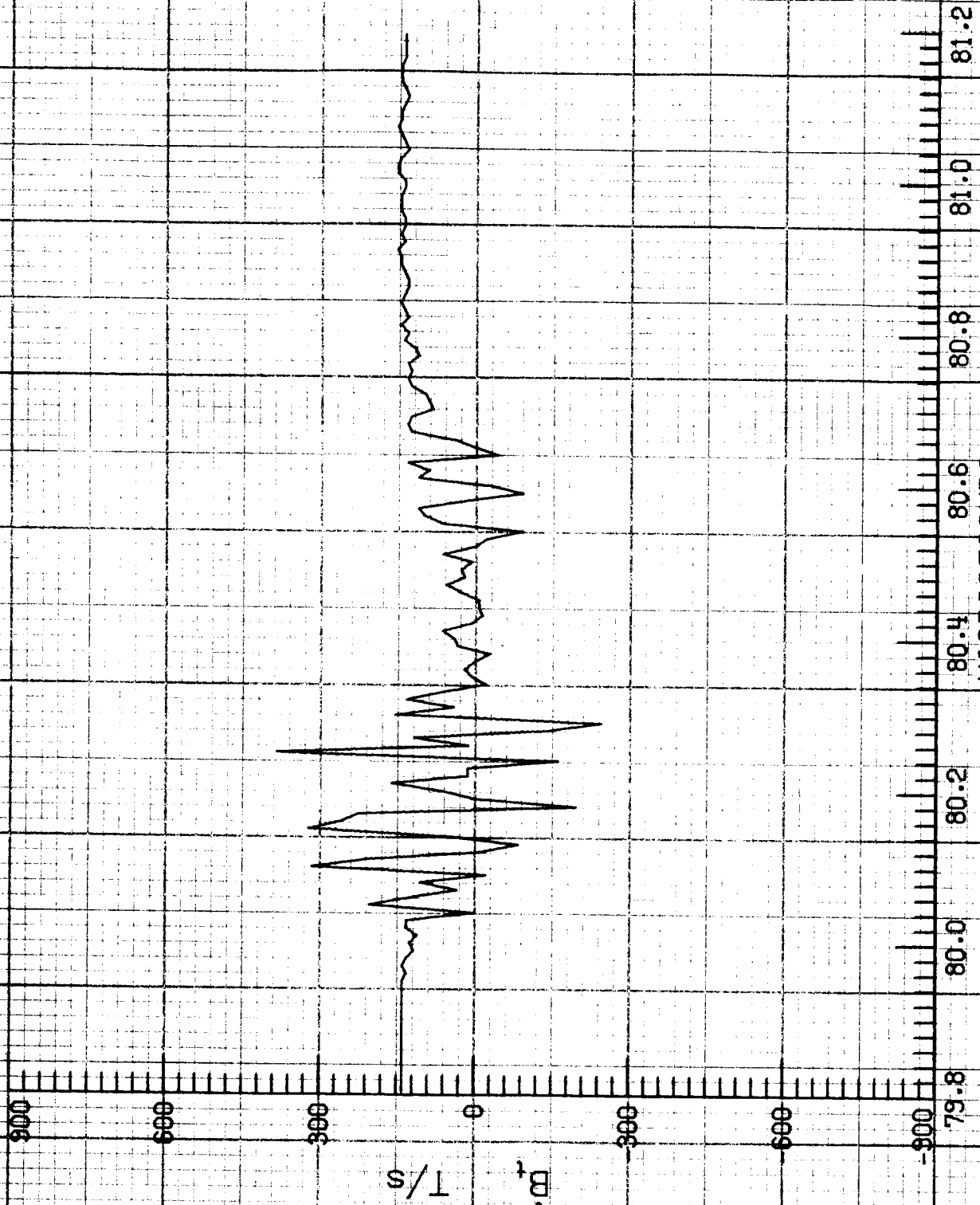
106 LIGHTNING/TK. S/M. THOMAS

5-035



CHANNEL NO. 4.0





MICROSECONDS

CHANNEL NO. 4.2

5-035

TEST NO. 83-056

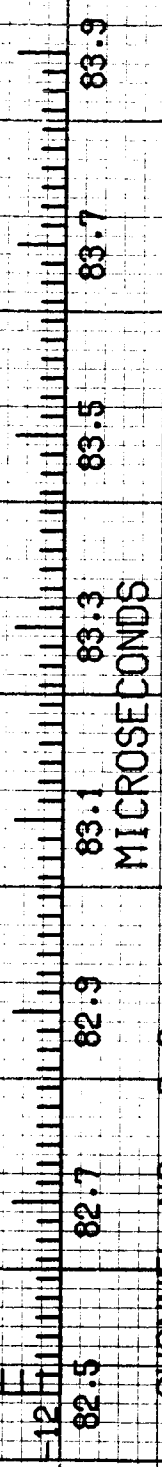
ORIGINAL PAGE IS
OF POOR QUALITY

F106 LIGHTNING/TK-3/M-THOMAS

5-039



D_t
 A/m^2



MICROSECONDS

CHANNEL NO. 2.0

8911

$\times 10^{10}$

A/s

1.1

0-039

83.9

83.7

83.5

83.3

83.1

82.9

82.7

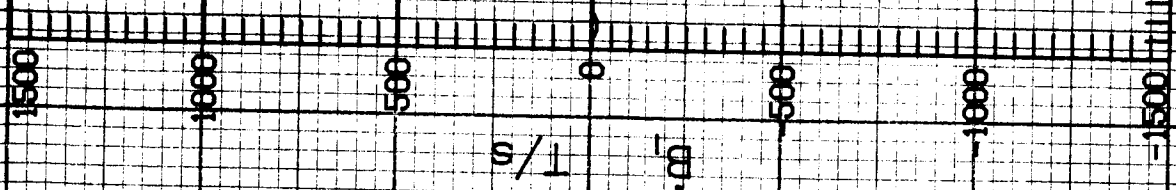
82.5

MICROSECONDS

CHANNEL NO. 2.1

ORIGINAL PAGE IS
OF POOR QUALITY

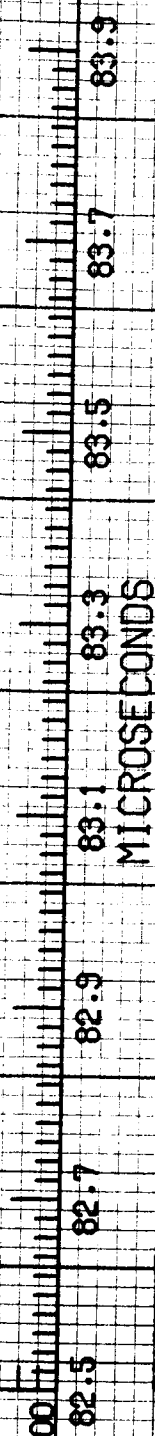
039



T/s
 B_1

6911

[Handwritten signature]



MICROSECONDS

CHANNEL NO. 2.2

TEST NO. 83-050

F106 LIGHTNING/TK-5/M. THOMAS

5-039

B_w T/s

C-4

1170

84.0

83.8

83.6

83.4

83.2

83.0

82.8

82.6

MICROSECONDS

CHANNEL NO. 4.0

ORIGINAL PAGE IS
OF POOR QUALITY

5-039

300 600 900 0 300 600 900

T/s
BD.
WT

84.0

83.8

83.6

83.4

83.2

83.0

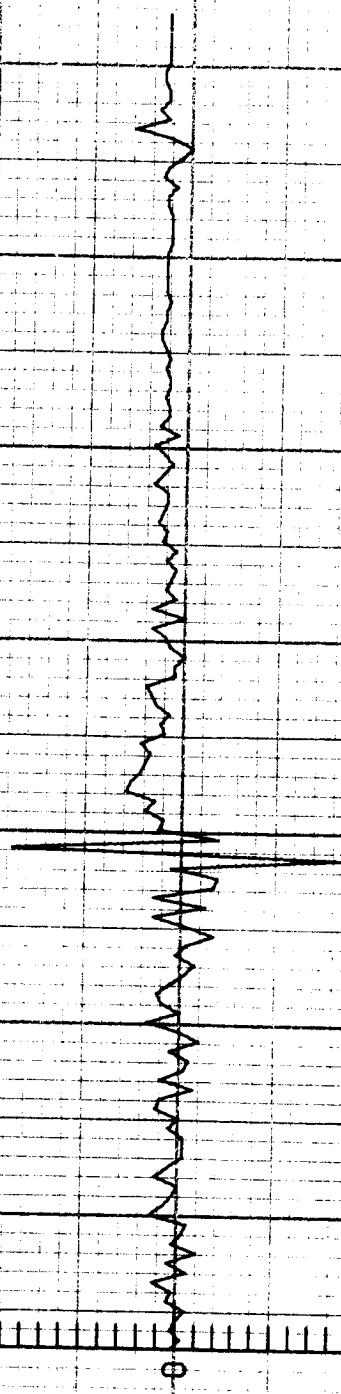
82.8

82.6

MICROSECONDS

CHANNEL NO. 4.1

1171



5-039

$\frac{D_t}{T/s}$

CHANNEL NO. 4.2

MICROSECONDS

82.6 82.8 83.0 83.2 83.4 83.6 83.8 84.0

1172

ORIGINAL PAGE IS
OF POOR QUALITY

F106 LIGHTNING/TK.3/M. THOMAS

TEST NO. 83-052

N-001

D_t A/m²



81.4 81.6 81.8

CHANNEL NO. 2.0

82.0 82.2 82.4 82.6 82.8

MICROSECONDS

1173

$\times 10^{10}$

24

16

8

0

8

16

24

81.4

81.6

81.8

82.0

82.2

82.4

82.6

82.8

A/s

I

N-001

MICROSECONDS

CHANNEL NO. 2.1

1175

1500

1000

500

0

500

1000

1500

T/s

B₁

N-001

81.4

81.6

81.8

82.0

82.2

82.4

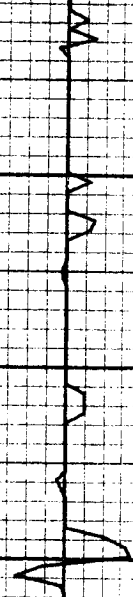
82.6

82.8

MICROSECONDS

CHANNEL NO. 2.2

1175



TEST NO. 83-052

F106 LIGHTNING/TX.5/M. THOMAS

N-001

300
600
900
0
300
600
900

T/s
B_w

1176

81.4

81.6

81.8

82.0

82.2

82.4

82.6

82.8

MICROSECONDS

CHANNEL NO. 4.0

ORIGINAL PAGE IS
OF POOR QUALITY

N-001

D_w
T/s

18
12
6
0
6
18

81.4

81.6

81.8

82.0

82.2

82.4

82.6

82.8

MICROSECONDS

CHANNEL NO. 4.2

117

ORIGINAL PAGE IS
OF POOR QUALITY

N-001

A/S

I-I

24
16
8
0
-8
-16
-24
X 10¹⁰

24
16
8
0
-8
-16
-24
81.5 81.7 81.9 82.1 82.3 82.5 82.7 82.9
MICROSECONDS

CHANNEL NO. 2.1

1179

1180

1500
1000
500
0
500
1000
1500

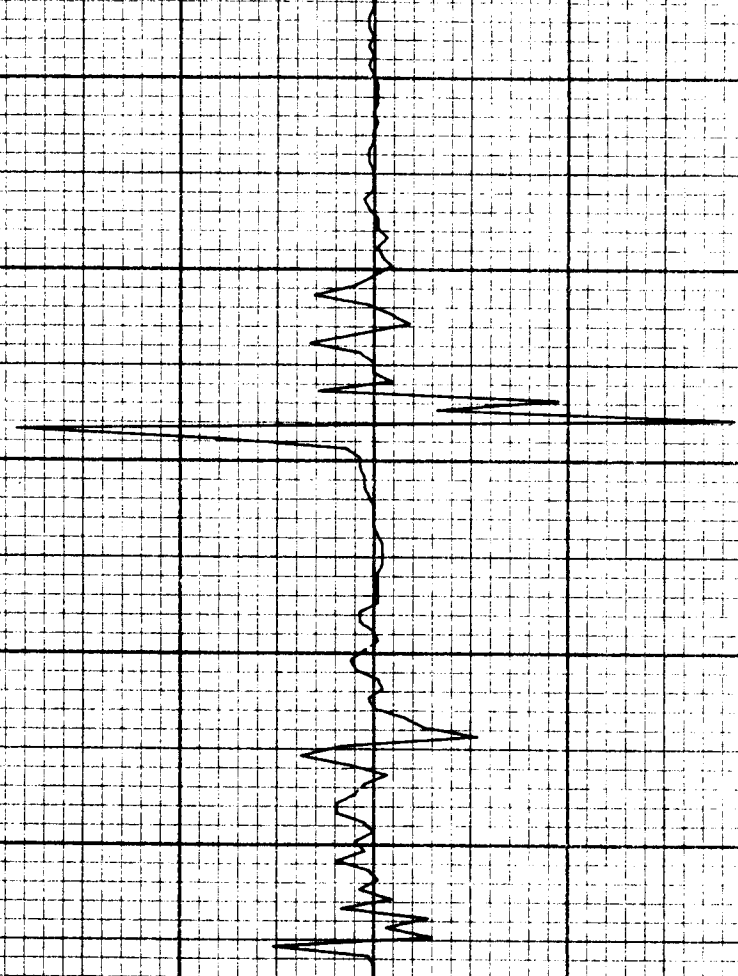
T/s
dB

N-001

81.5 81.7 81.9 82.1 82.3 82.5 82.7 82.9

MICROSECONDS

CHANNEL NO. 2.2



TEST NO. 83-053

F106 LIGHTNING/TK.5/M. THOMAS

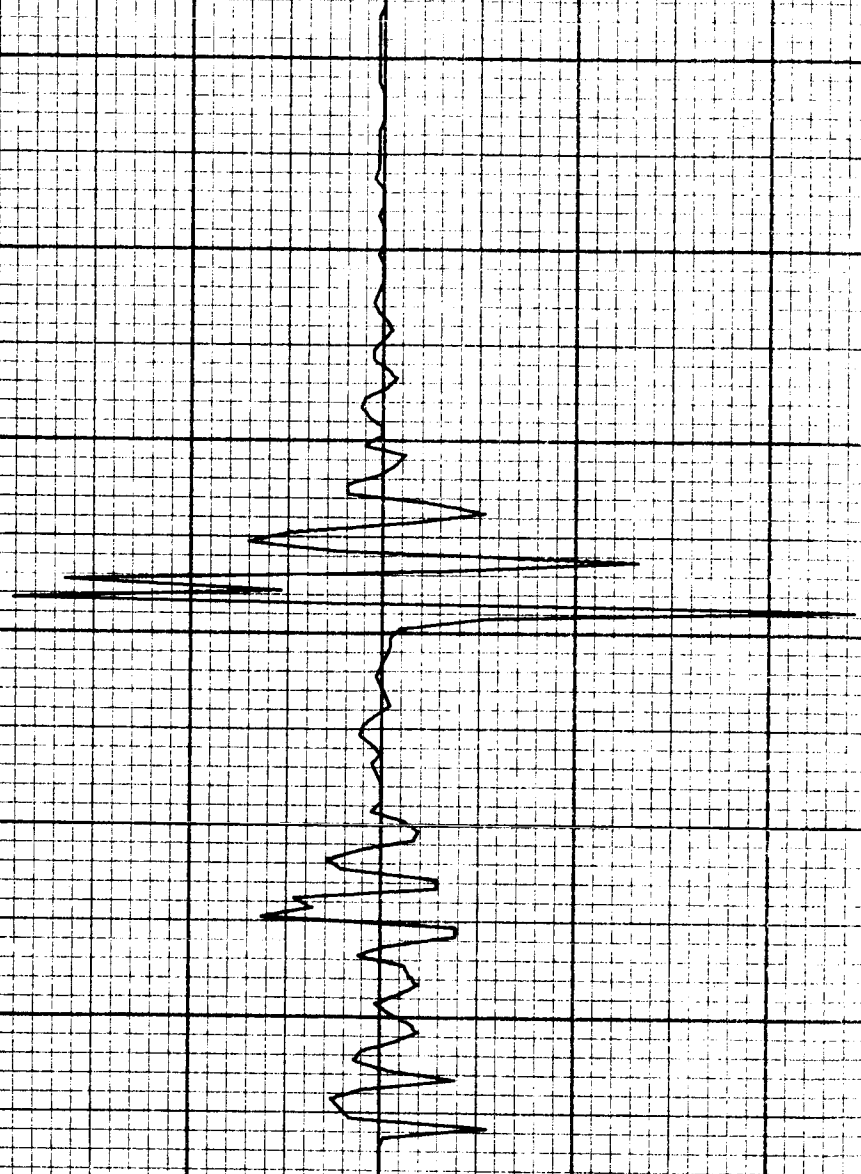
N-001

300
600
900
0
300
600
900

T/s
B_w

81.5 81.7 81.9 82.1 82.3 82.5 82.7 82.9
MICROSECONDS

CHANNEL NO. 4.0



18

12

6

0

6

12

18

81.5

81.7

81.9

82.1

82.3

82.5

82.7

82.9

I/s

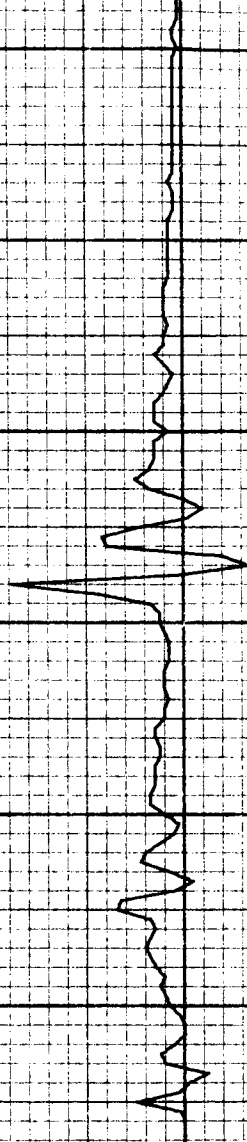
D_w

N-001

MICROSECONDS

CHANNEL NO. 4.2

1182



ORIGINAL PAGE IS
OF POOR QUALITY

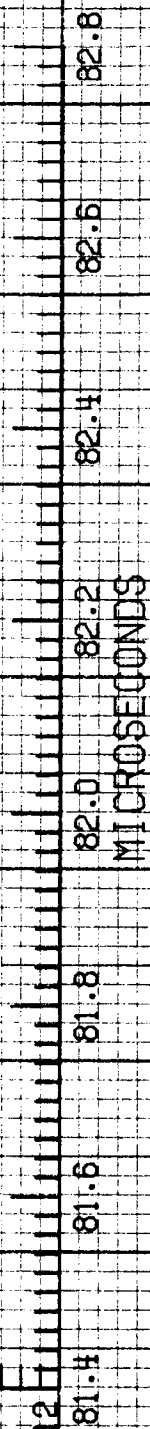
TEST NO. 83-053

F106 LIGHTNING/TK.3/M.THOMAS

5-002



$D_t A/m^2$



MICROSECONDS

CHANNEL NO. 2.0

1183

$\times 10^{10}$

24

16

8

0

8

16

24

A/s

I.

S-002

81.4

81.5

81.8

82.0

82.2

82.4

82.5

82.8

MICROSECONDS

CHANNEL NO. 2.1

1184

ORIGINAL PAGE IS
OF POOR QUALITY

5-002

I/s
dB

1500
1000
500
0
-500
-1000
-1500

81.4

81.6

81.8

82.0

82.2

82.4

82.6

82.8

MICROSECONDS

CHANNEL NO. 2.2

1185

1186

T/s

B_w

5-002

106 LIGHTNING/TK.5/M. THOMAS

TEST NO. 83-053

82.8

82.6

82.4

82.2

82.0

81.8

81.6

81.4

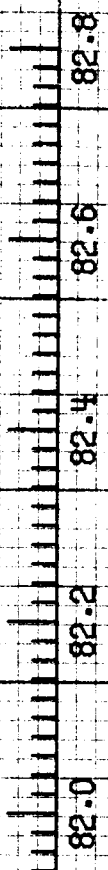
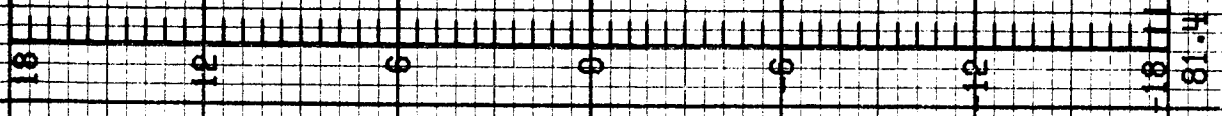
MICROSECONDS

CHANNEL NO. 4.0

ORIGINAL PAGE IS
OF POOR QUALITY

5-002

D_w
T/s



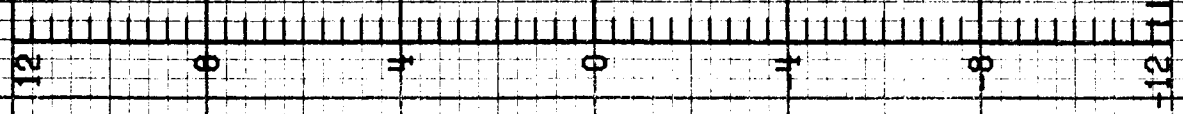
CHANNEL NO. 4-2

1187

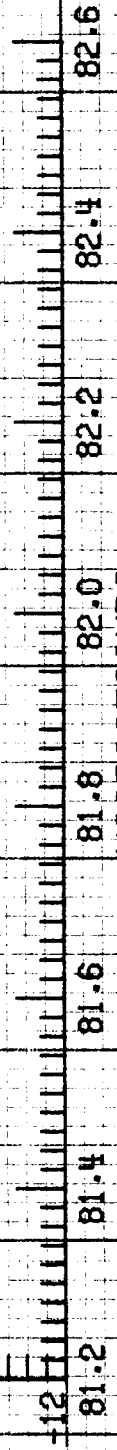
TEST NO. 83-05

F106 LIGHTNING/TK.3/M. THOMAS

N-001



D_t
 A/m^2



MICROSECONDS

CHANNEL NO. 2.0

1.88

ORIGINAL PAGE IS
OF POOR QUALITY

$\times 10^{10}$

A/s

I

N-001

81.2

81.4

81.6

81.8

82.0

82.2

82.4

82.6

MICROSECONDS

CHANNEL NO. 2.1

1190

N-001

T/s
 B_1

81.2 81.4 81.6 81.8 82.0 82.2 82.4 82.6

MICROSECONDS

CHANNEL NO. 2.2



F106 LIGHTNING/TK.5/M. THOMAS

TEST NO. 83-054

ORIGINAL PAGE IS
OF POOR QUALITY

N-001

D_f
 A/m^2



81.2

81.4

81.6

81.8

82.0

82.2

82.4

82.6

MICROSECONDS

CHANNEL NO. 4.0

1191

N-001

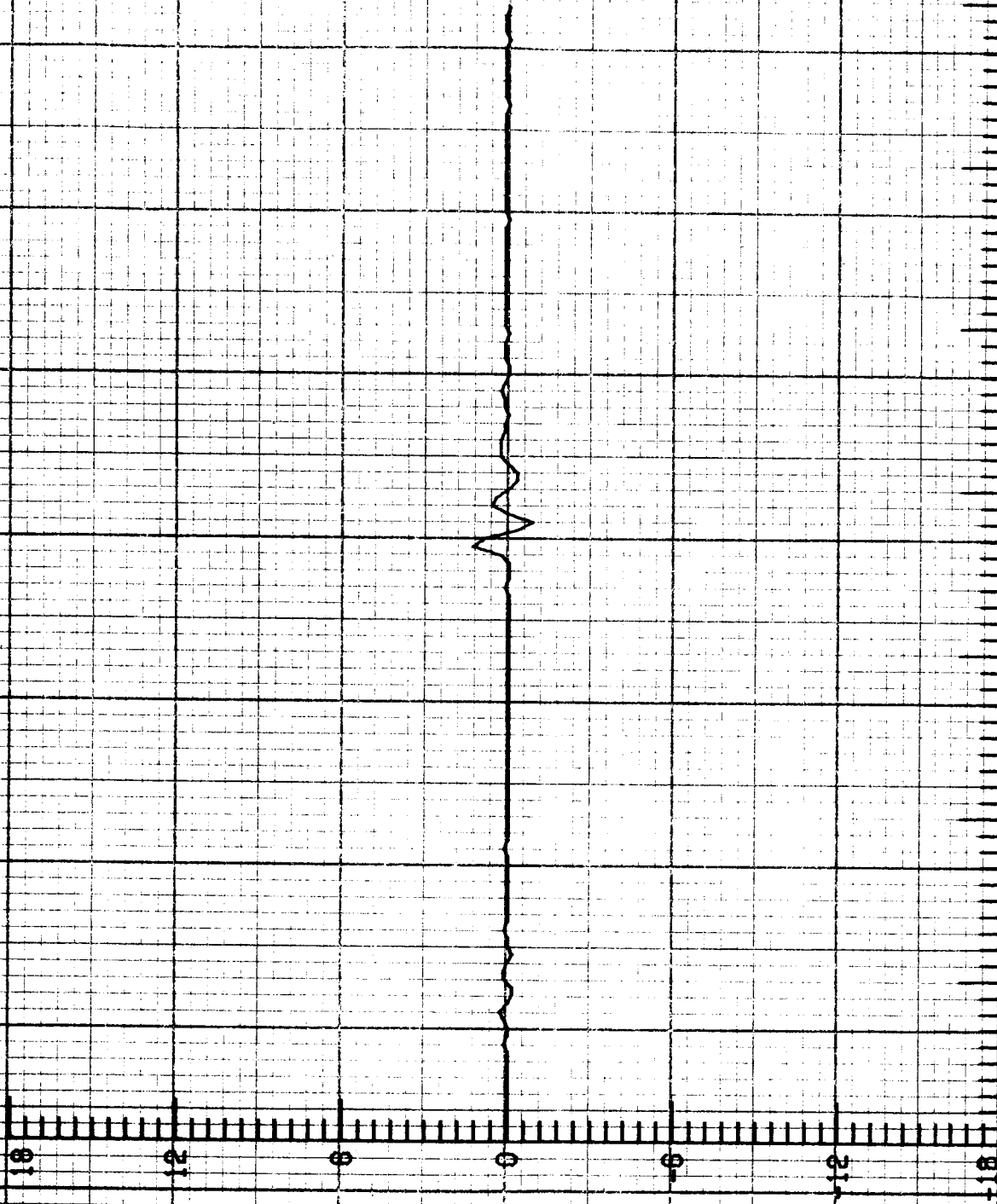
D_w
T/s

CHANNEL NO. 4.2

MICROSECONDS

81.2 81.4 81.6 81.8 82.0 82.2 82.4 82.6

1192

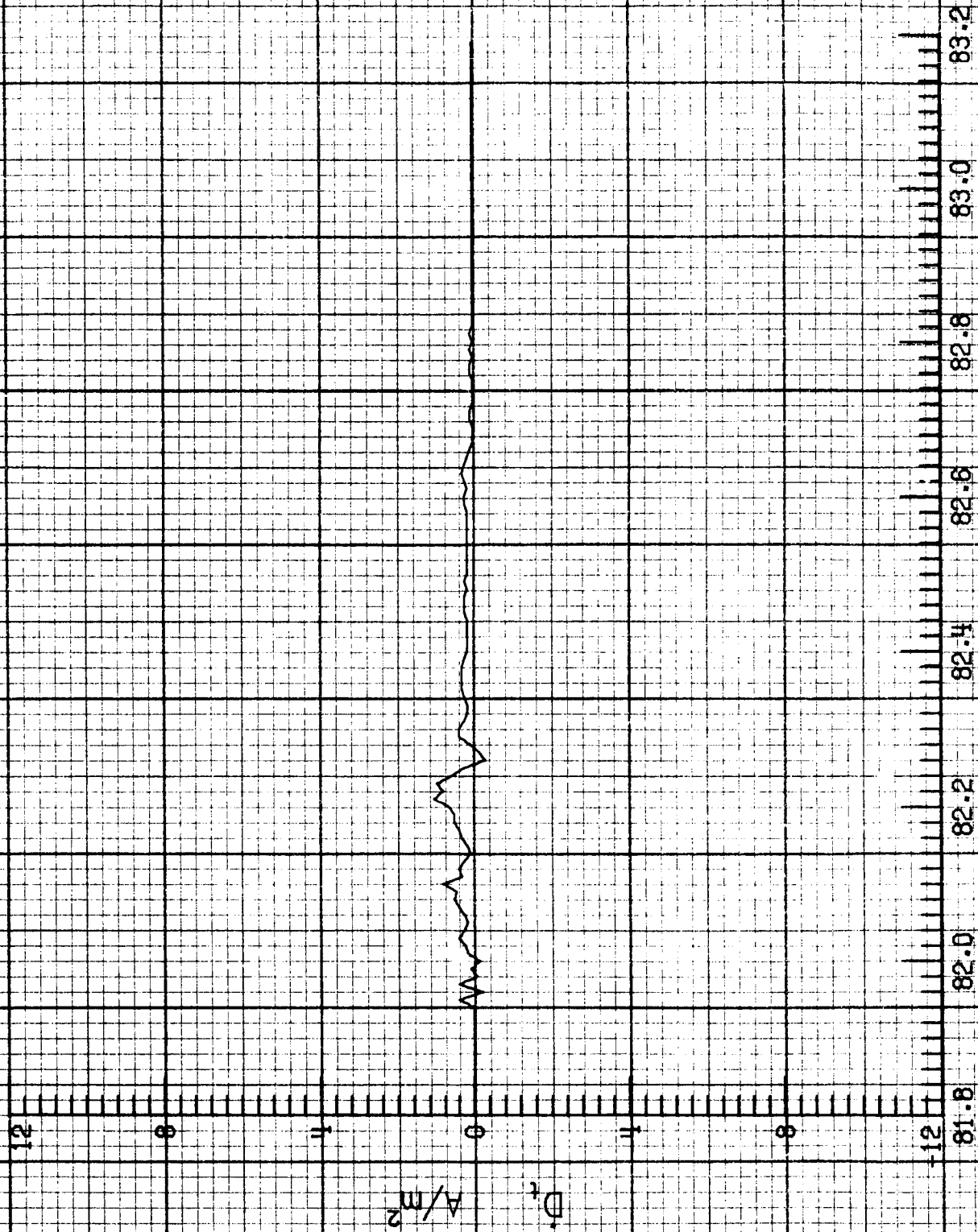


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OF POOR QUALITY

F106 LIGHTNING/LK.3/M. THOMAS

TEST NO. 83-054

S-001



CHANNEL NO. 2.0

1193

$\times 10^{10}$

24

16

8

0

0

-16

-24

81.8

82.0

82.2

82.4

82.6

82.8

83.0

83.2

MICROSECONDS

CHANNEL NO. 2.1

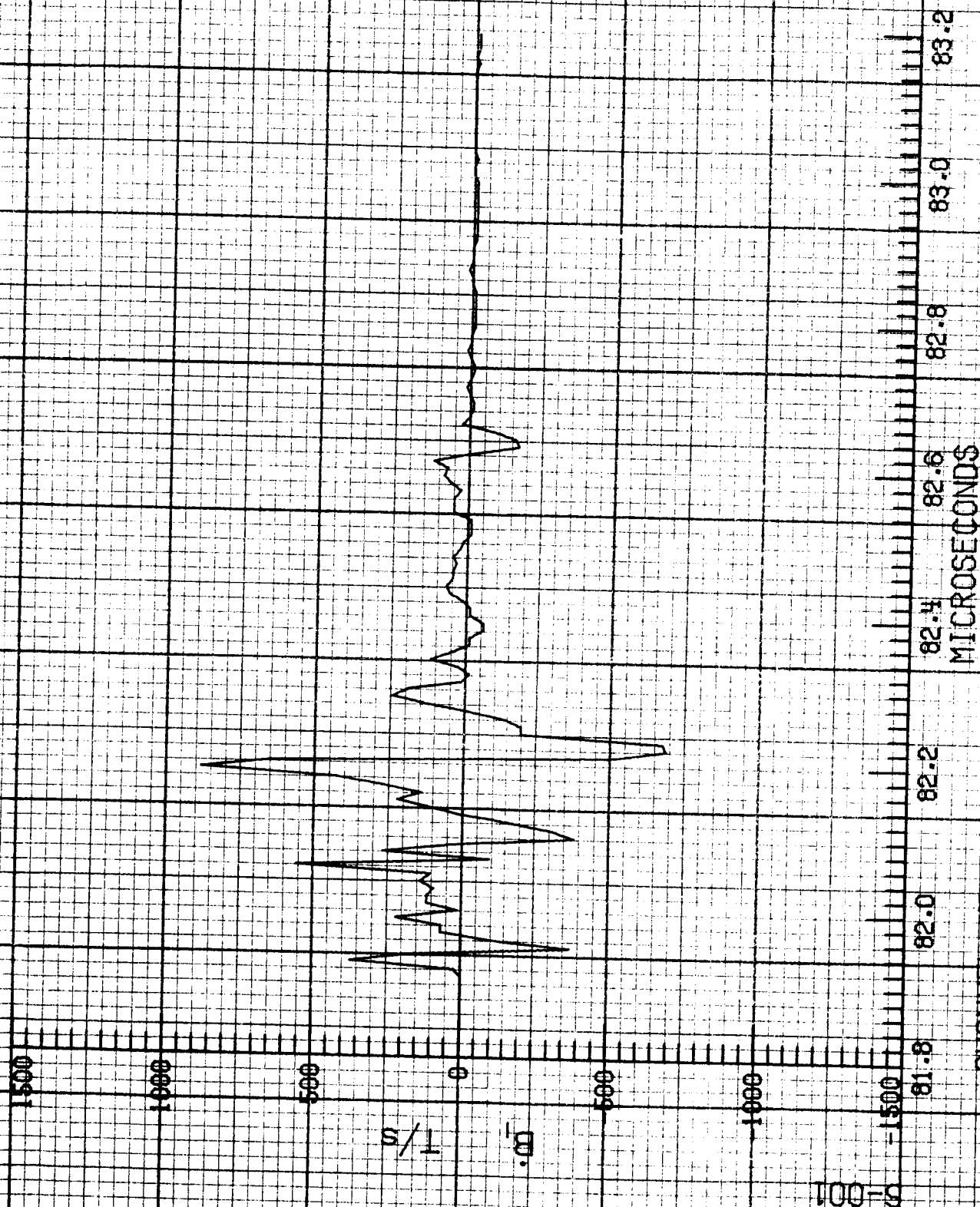
A/S

I.I.

S-001

1194

ORIGINAL PAGE IS
OF POOR QUALITY

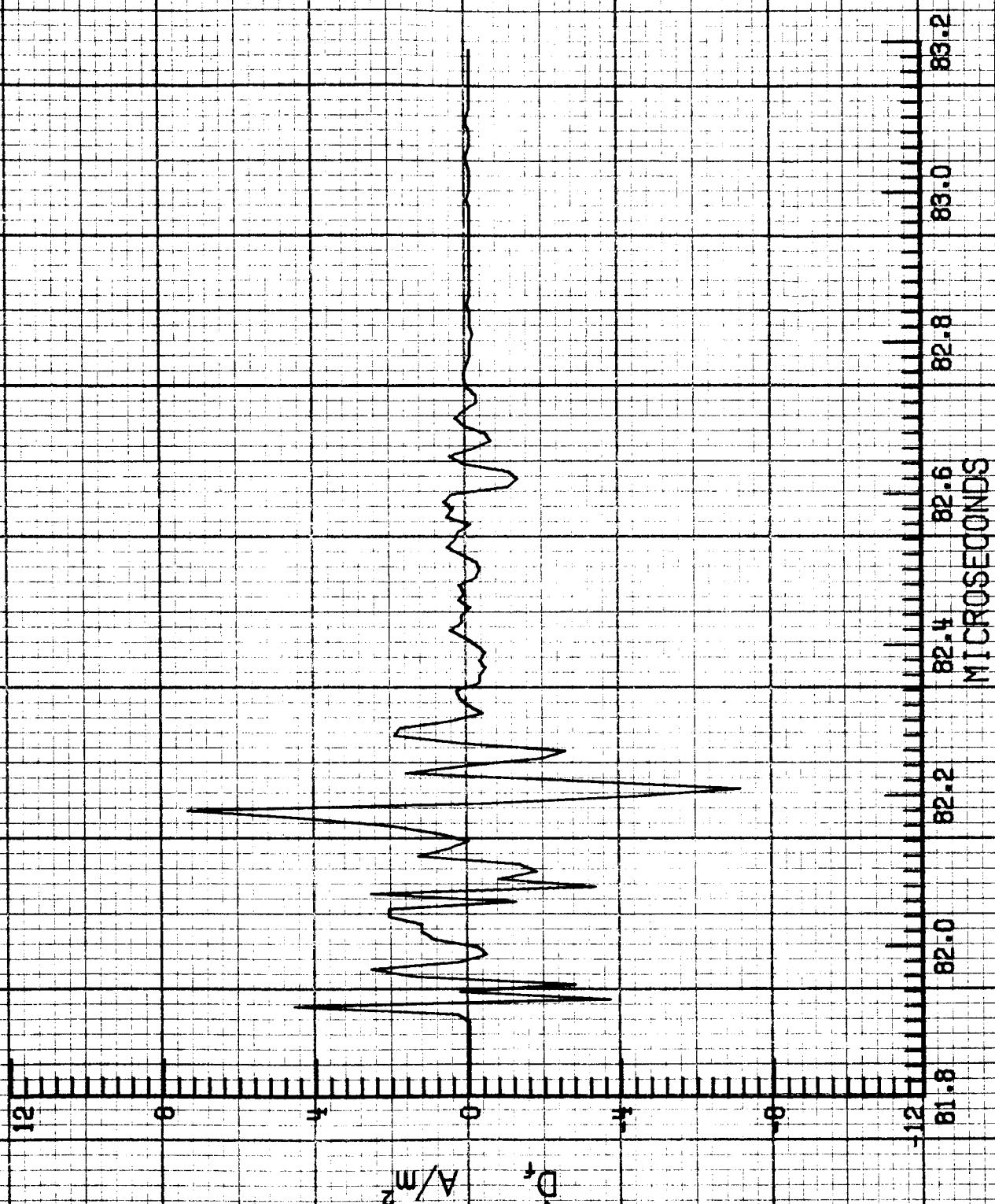


CHANNEL NO. 2.2

TEST NO. 83-054

F106 LIGHTNING/TK.S/M.THOMAS

S-001

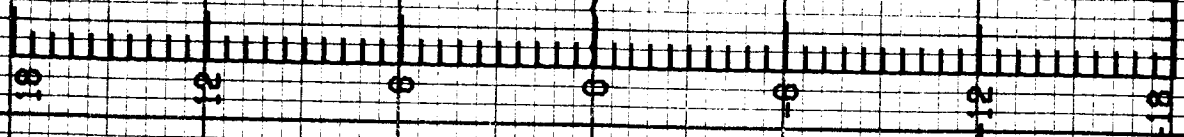


CHANNEL NO. 4.0

ORIGINAL PAGE IS
OF POOR QUALITY

3-001

D_{11}
T/s



81.8 82.0 82.2 82.4 82.6 82.8 83.0 83.2
MICROSECONDS

CHANNEL NO. 4.2

1197

TEST NO. 83-054

F106 LIGHTNING/TK.3/M. THOMAS

5-002

D_t
 A/m^2

12 0 + 0 + 0

81.5

81.7

81.9

82.1

82.3

82.5

82.7

82.9

MICROSECONDS

CHANNEL NO. 2.0

1198

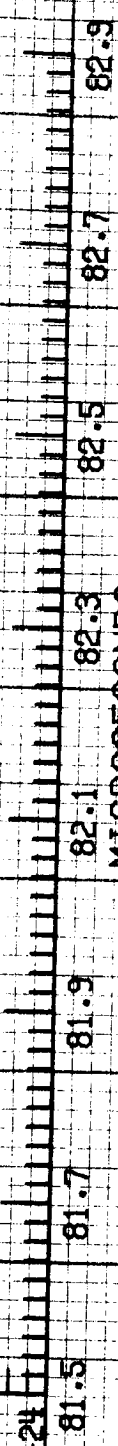
ORIGINAL PAGE IS
OF POOR QUALITY

6611

$\times 10^{10}$

A/s
I.

2-002



CHANNEL NO. 2.1

1500
1000
500
0
-500
-1000
-1500

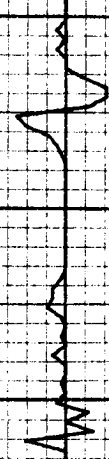
T/s
 B_1

1200

81.5 81.7 81.9 82.1 82.3 82.5 82.7 82.9

MICROSECONDS

CHANNEL NO. 2.2

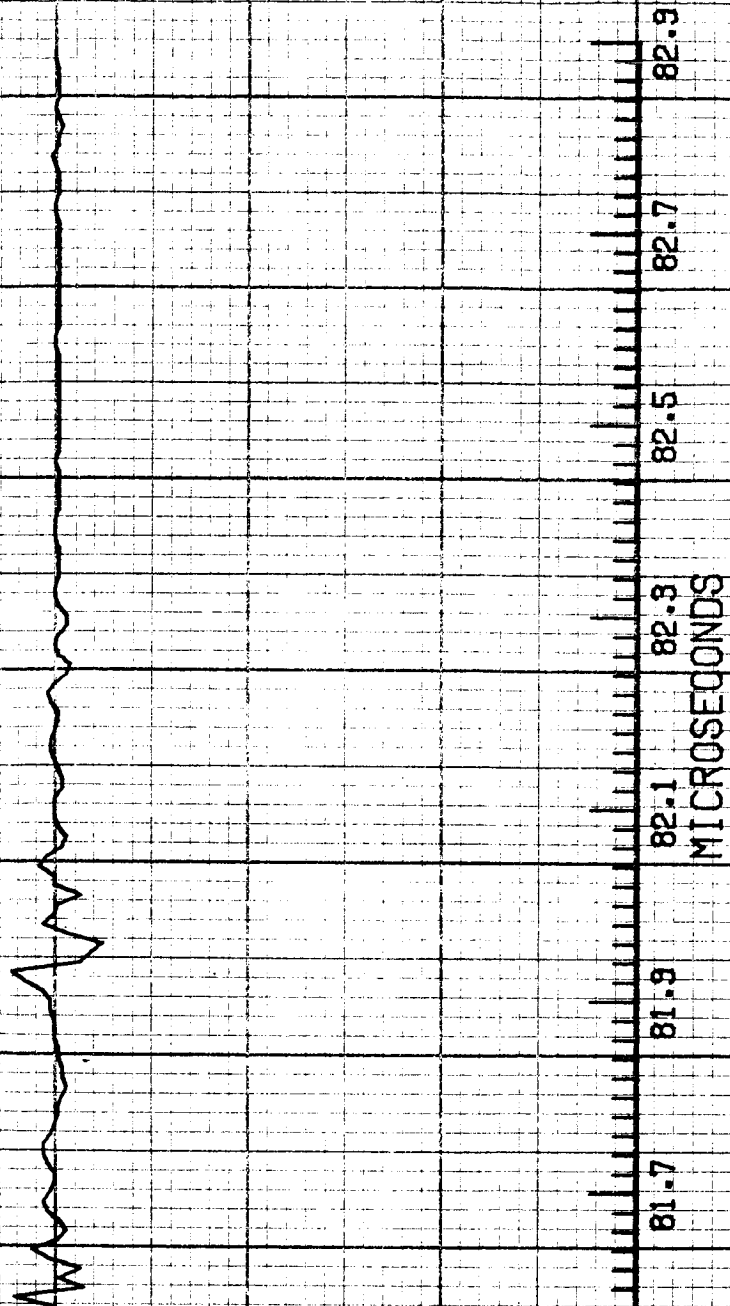
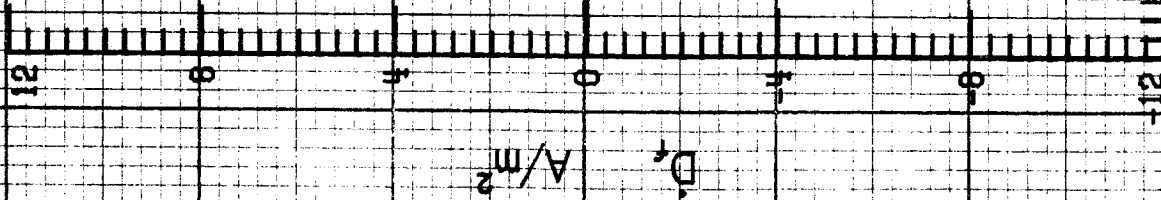


TEST NO. 83-054

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OF POOR QUALITY

F106 LIGHTNING/TK-5/M. THOMAS

5-002



CHANNEL NO. 4.0

1201

S-002

D_w T/s

18 12 6 0 6 12 18

T/s

D_w

81.5 81.7 81.9 82.1 82.3 82.5 82.7 82.9

MICROSECONDS

CHANNEL NO. 4.2

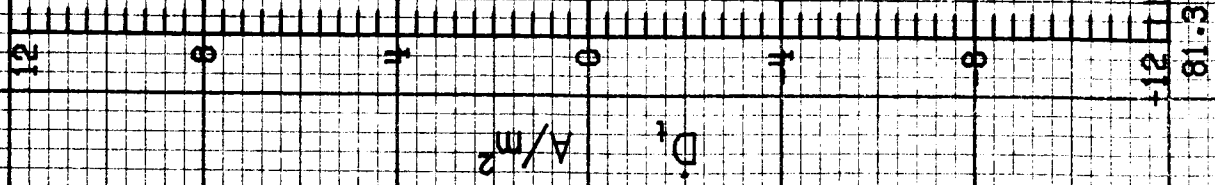
1202

ORIGINAL PAGE IS
OF POOR QUALITY

F106 LIGHTNING/TK.3/M. THOMAS

TEST NO. 83-054

5-003



CHANNEL NO. 2.0

1203

$\times 10^{10}$

24

16

8

A/s

0

8

16

5-003

24

81.3

81.5

81.7

81.9

82.1

82.3

82.5

82.7

MICROSECONDS

CHANNEL NO. 2.1

1204

ORIGINAL PAGE IS
OF POOR QUALITY

5-003

T/s

0

μ

81.3

81.5

81.7

81.9

82.1

82.3

82.5

82.7

MICROSECONDS

CHANNEL NO. 2.2

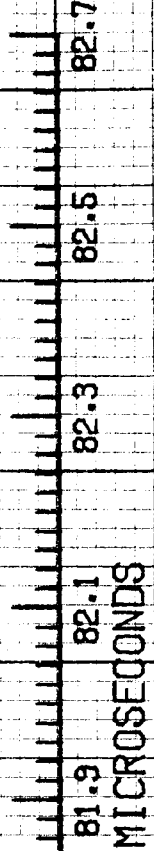
1205

TEST NO. 83-051

F106 LIGHTNING/TK-5/M-THOMAS

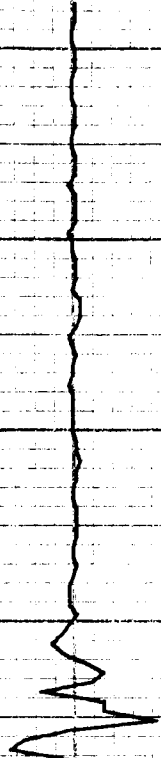
5-003

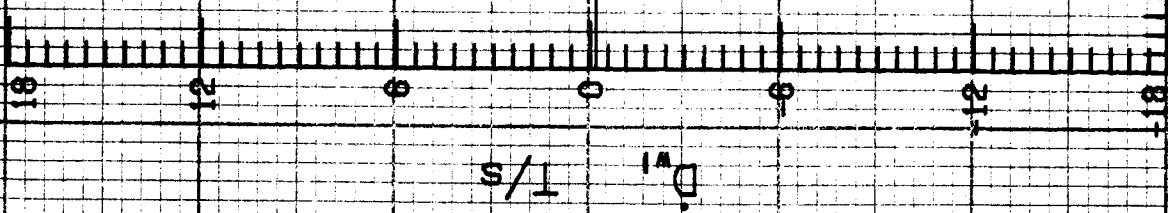
D_r A/m²



CHANNEL NO. 4.0

1206

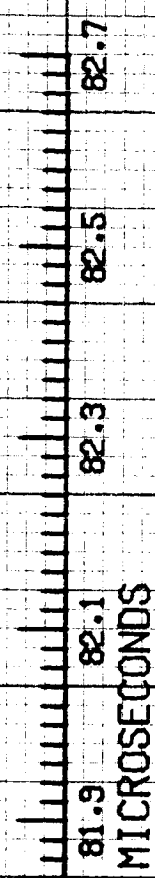




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OF POOR QUALITY

$D_v T/s$

1207



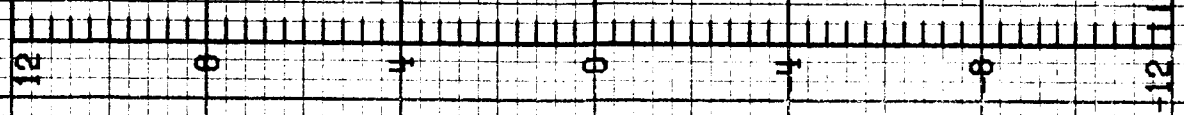
CHANNEL NO. 4.2

MICROSECONDS

TEST NO. 83-05

F106 LIGHTNING/TK.3/M. THOMAS

N-002



$D, A/m^2$

MICROSECONDS

CHANNEL NO. 2.0

1208

N-002

CHANNEL NO. 2.1

MICROSECONDS

81.5 81.7 81.9

82.3 82.5 82.7 82.9

A/s

I.

$\times 10^{10}$

24

16

8

0

0

16

24

1209

N-002

B_1
T/s

1500
1000
500
0
-500
-1000
-1500

81.5

81.7

81.9

82.1

82.3

82.5

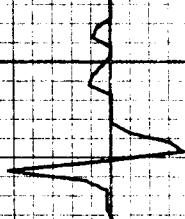
82.7

82.9

MICROSECONDS

CHANNEL NO. 2.2

1210

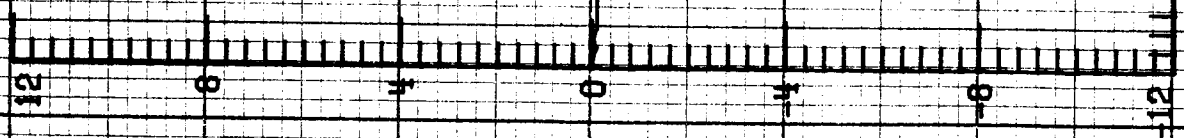


TEST NO. 83-054

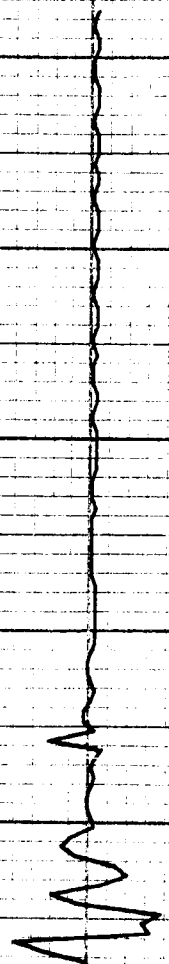
F106 LIGHTNING/TK-5/M. THOMAS

N-002

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OF POOR QUALITY



D_r
 A/m^2



CHANNEL NO. 4.0

MICROSECONDS

82.9

82.7

82.5

82.3

82.1

81.9

81.7

81.5

MICROSECONDS

CHANNEL NO. 4.2

N-002

 D_w
T/s

TEST NO. 83-054

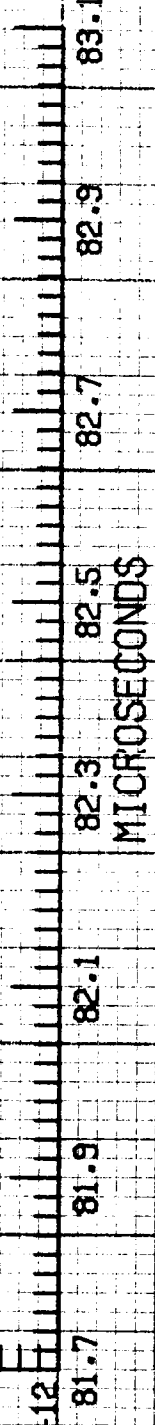
F106 LIGHTNING/TK.3/M. THOMAS

N-008



D_t
 A/m^2

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OF POOR QUALITY



MICROSECONDS

CHANNEL NO. 2.0

1214

$\times 10^{10}$

I. A/s

N-003

MICROSECONDS

CHANNEL NO. 2.1



ORIGINAL PAGE IS
OF POOR QUALITY

1500

1000

500

0

-500

-1000

-1500

I/s

B_1

N-008

81.7

81.9

82.1

82.3

82.5

82.7

82.9

83.1

MICROSECONDS

CHANNEL NO. 2.2

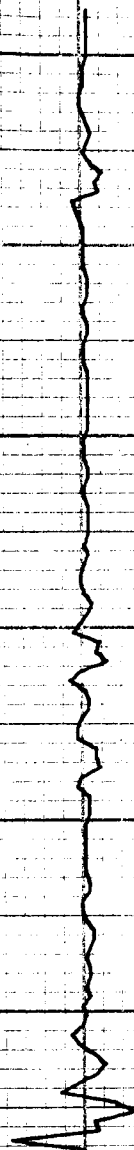
1215

TEST NO. 83-054

F106 LIGHTNING/TK-5/M. THOMAS

N-008

D_r
 A/m^2



1216

81.7

81.3

82.1

82.3

82.5

82.7

82.9

83.1

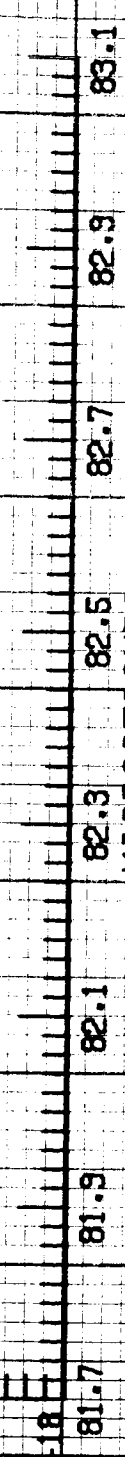
MICROSECONDS

CHANNEL NO. 4.0

ORIGINAL PAGE IS
OF POOR QUALITY

N-003

D_v
T/s



MICROSECONDS

CHANNEL NO. 4.2

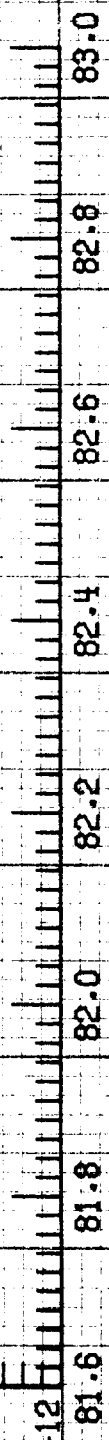
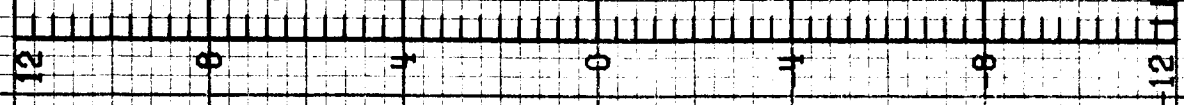
1217

TEST NO. 83-05

F106 LIGHTNING/TK-3/M. THOMAS

S-004

D_t
 A/m^2



MICROSECONDS

CHANNEL NO. 2.0

1218

ORIGINAL PAGE IS
OF POOR QUALITY

S-004

I
A/s

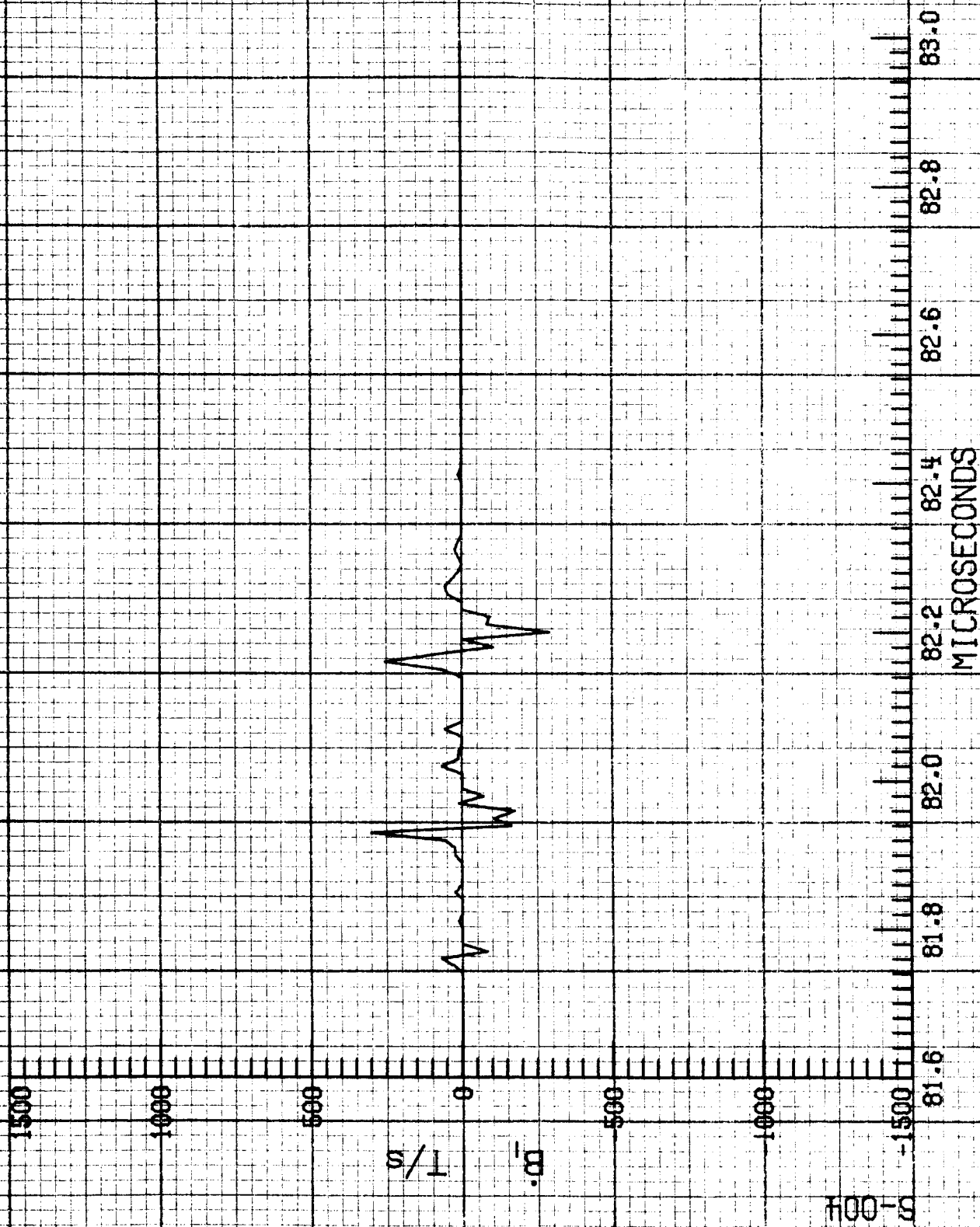
$\times 10^{10}$

81.6 81.8 82.0 82.2 82.4 82.6 82.8 83.0

MICROSECONDS

CHANNEL NO. 2.1

1219



CHANNEL NO. 2.2

83.0

82.8

82.6

82.4

82.2

82.0

81.8

81.6

1220

TEST NO. 83-054

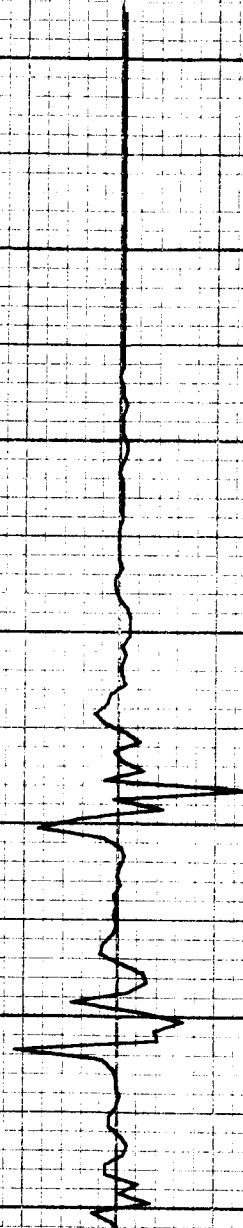
F106 LIGHTNING/TK-5/M. THOMAS

S-004

D_r
 A/m^2

12 10 8 6 4 2 0

ORIGINAL PAGE IS
OF POOR QUALITY



CHANNEL NO. 4.0

MICROSECONDS

81.6

81.8

82.0

82.2

82.4

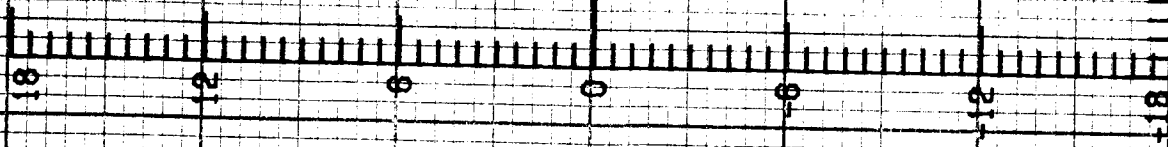
82.6

82.8

83.0

5-100

D₁
T/s



MICROSECONDS

CHANNEL NO. 4.2



ORIGINAL PAGE IS
OF POOR QUALITY

TEST NO. 83-054

F106 LIGHTNING/TK.3/M. THOMAS

N-004

D_t A/m²

-12 -10 -8 -6 -4 -2 0 2 4 6 8 10 12

81.6 81.8 82.0 82.2 82.4 82.6 82.8 83.0

MICROSECONDS

CHANNEL NO. 2.0

1223

$\times 10^{10}$

24

16

0

0

0

16

24

81.6

81.8

82.0

82.2

82.4

82.6

82.8

83.0

MICROSECONDS

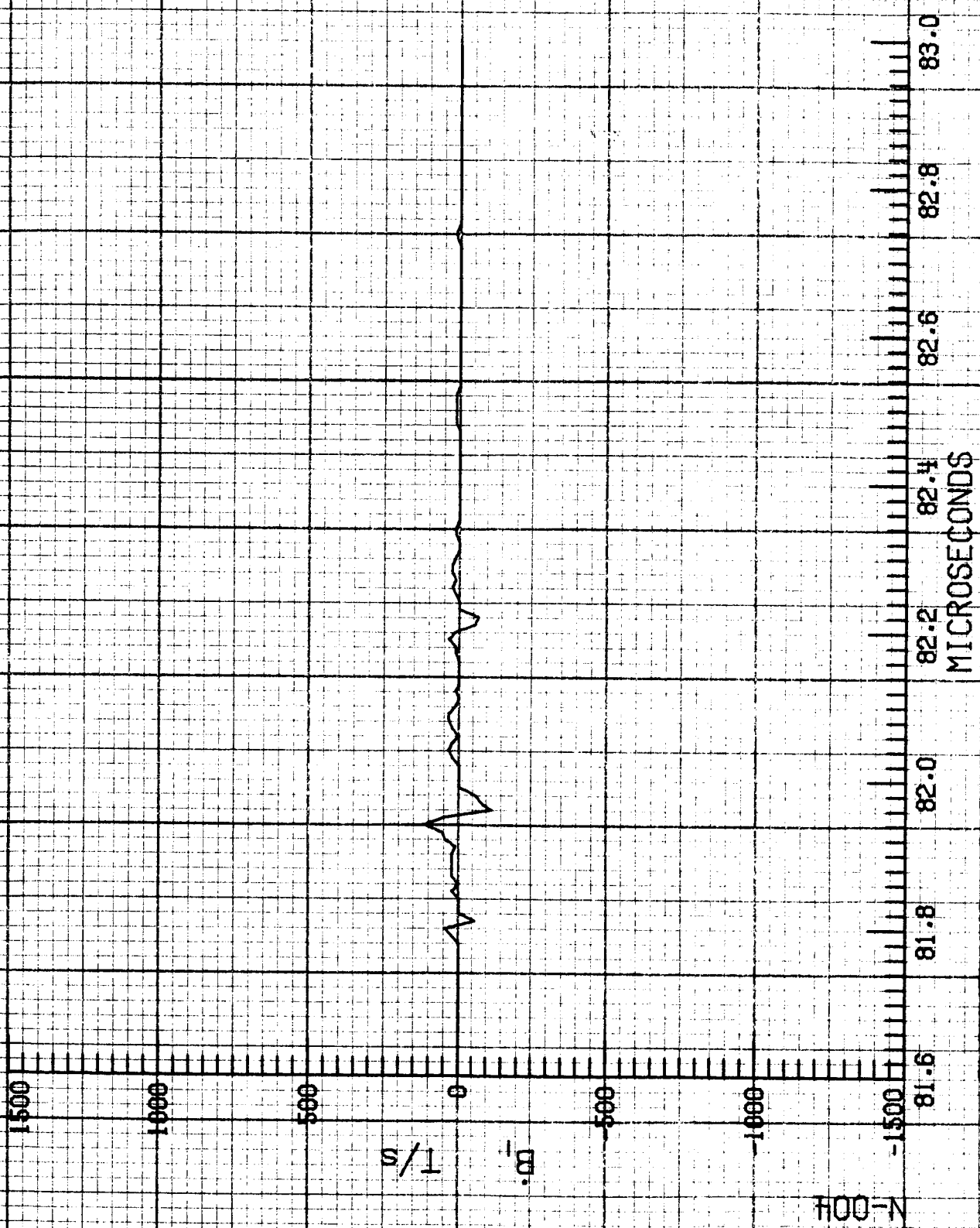
CHANNEL NO. 2.1

ORIGINAL PAGE IS
OF POOR QUALITY

A/S

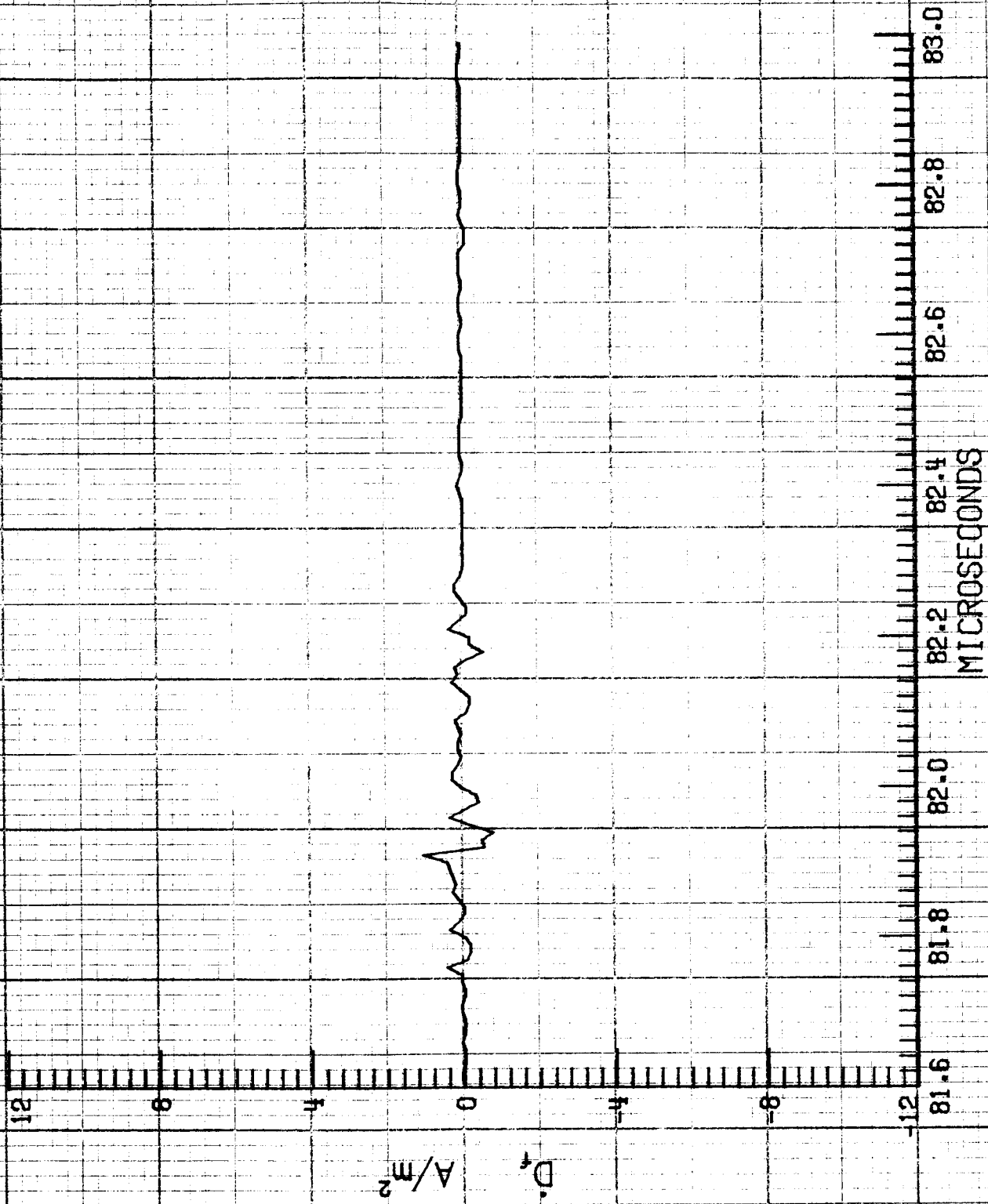
I.

N-004



CHANNEL NO. 2.2

1225



CHANNEL NO. 4.0

N-004

F106 LIGHTNING/TK.5/M. THOMAS

TEST NO. 83-054

ORIGINAL PAGE IS
OF POOR QUALITY

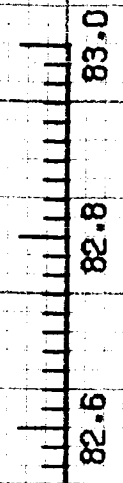
N-004

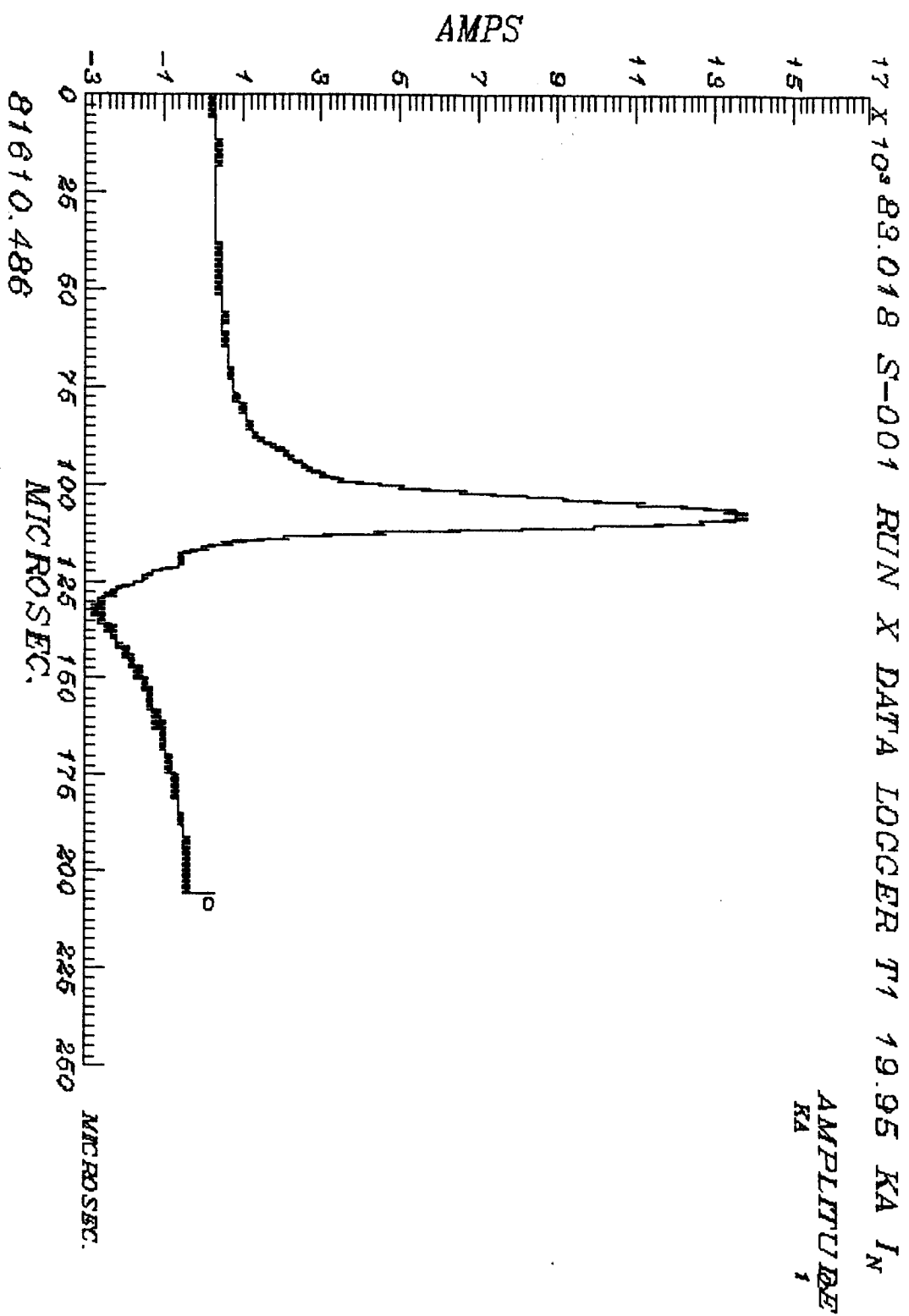
D_w
T/s



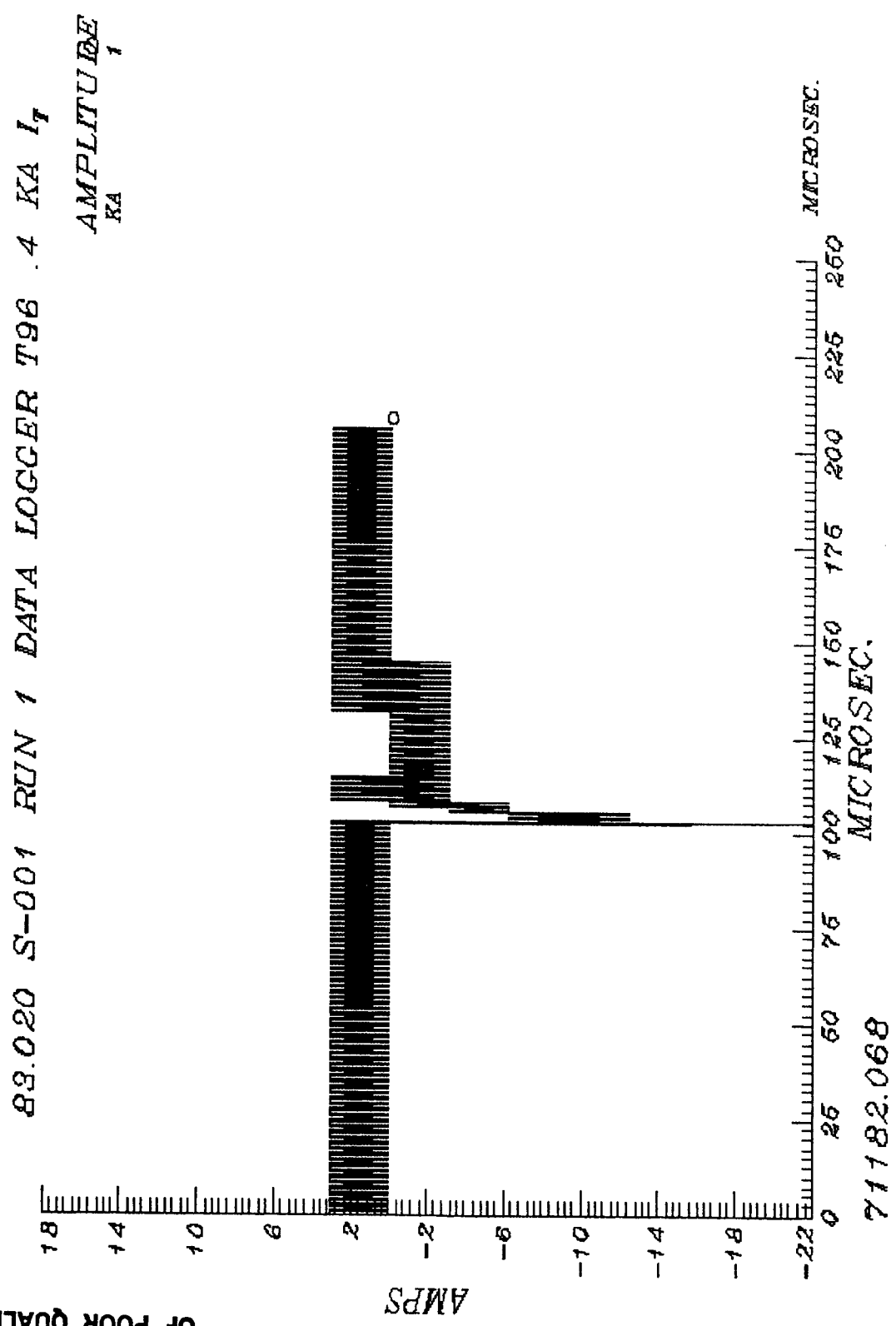
MICROSECONDS

CHANNEL NO. 4.2

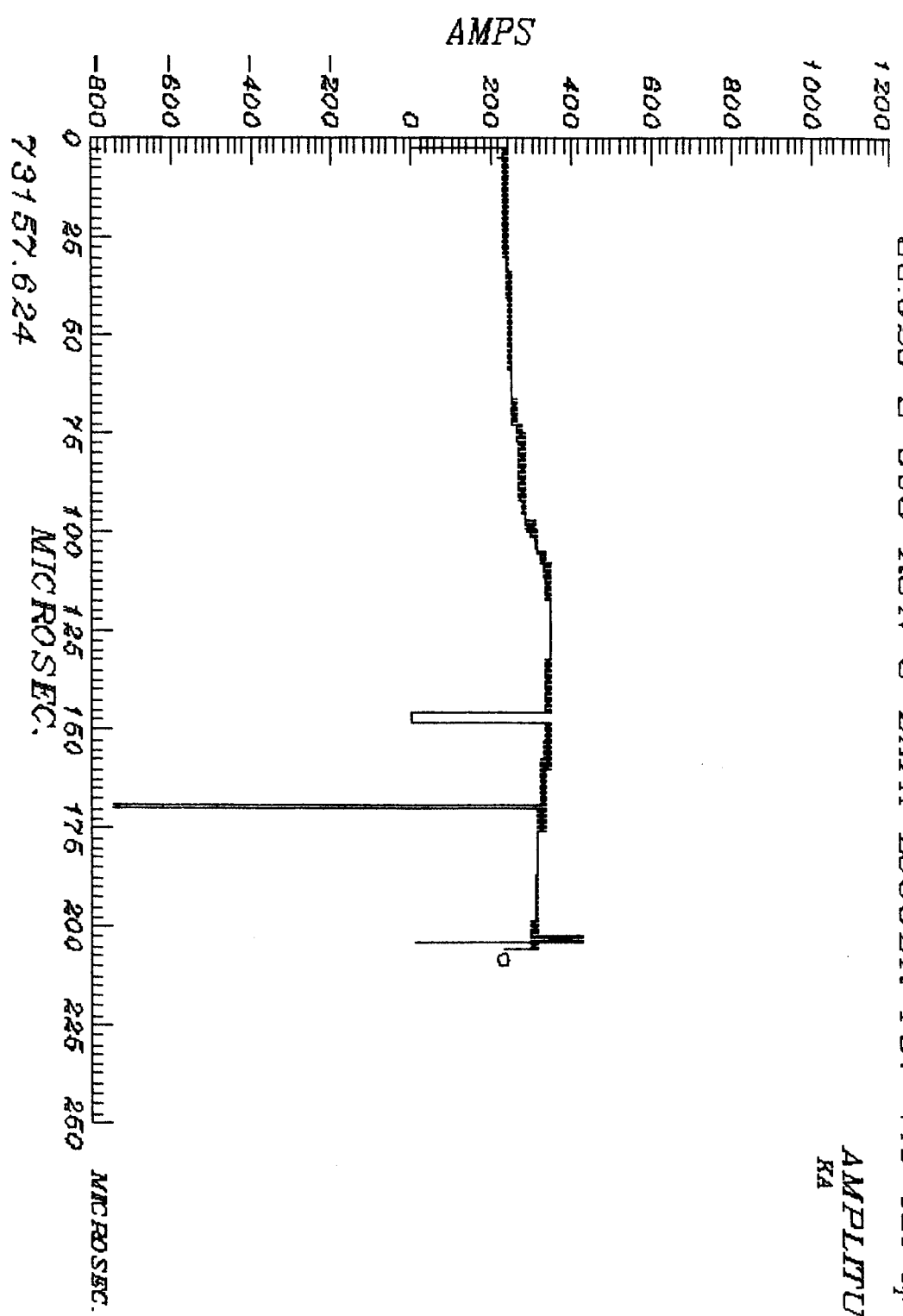




ORIGINAL PAGE IS
OF POOR QUALITY

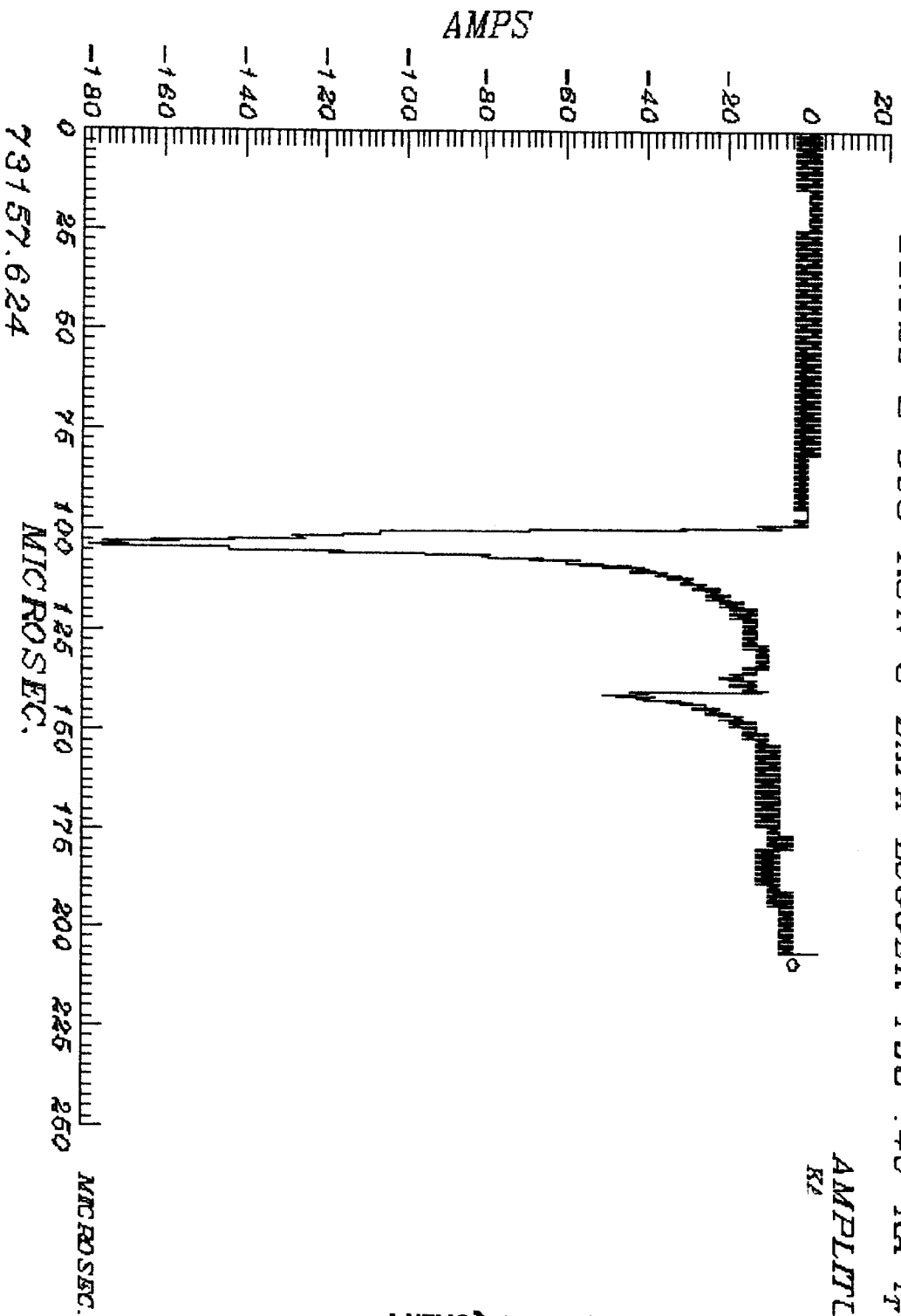


83.020 S-003 RUN 5 DATA LOGGER T97 1.0 KA I_T
AMPLITUDE
KA 1



83.020 S-003 RUN 5 DATA LOGGER T98 .40 KA I_T

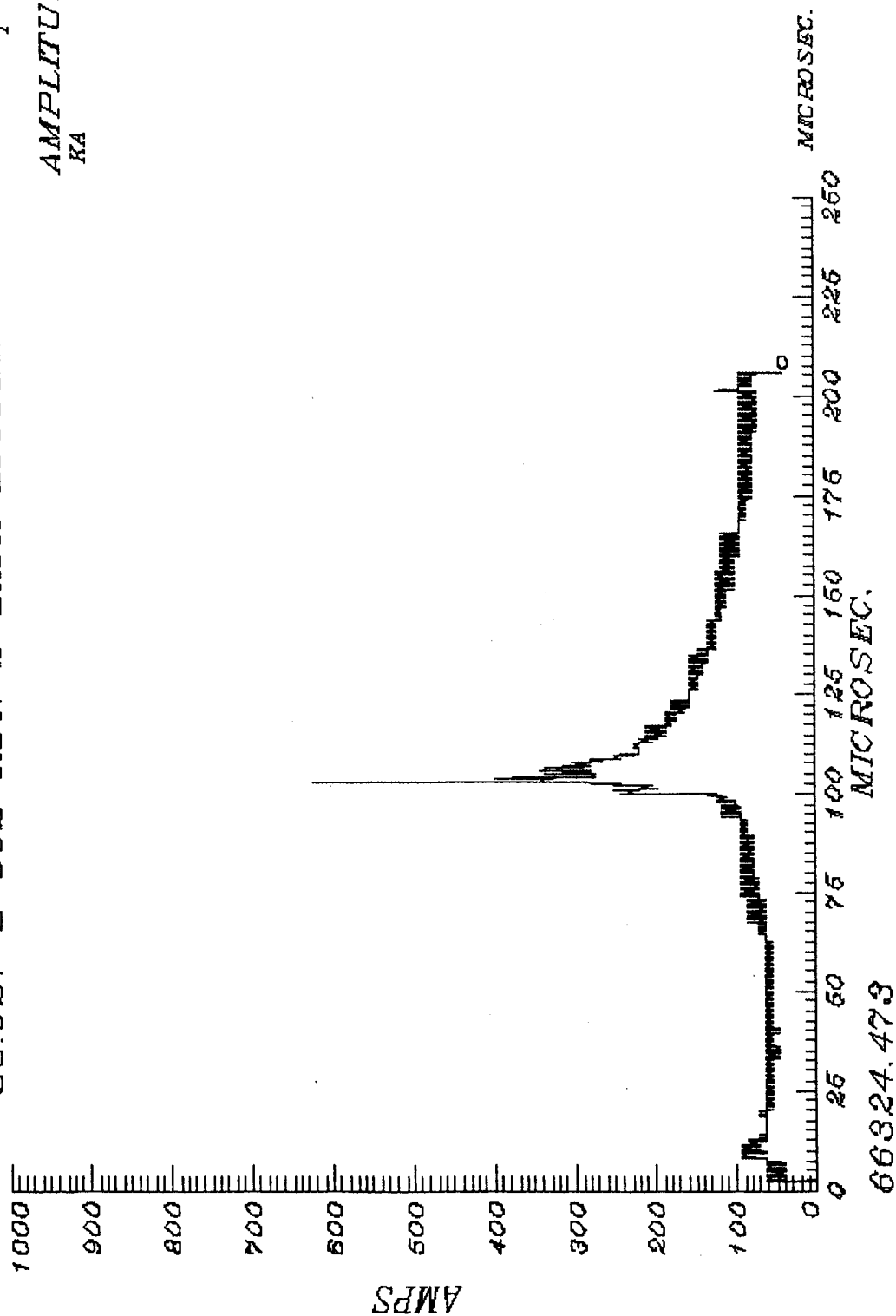
AMPLITUDE
K₁ 1



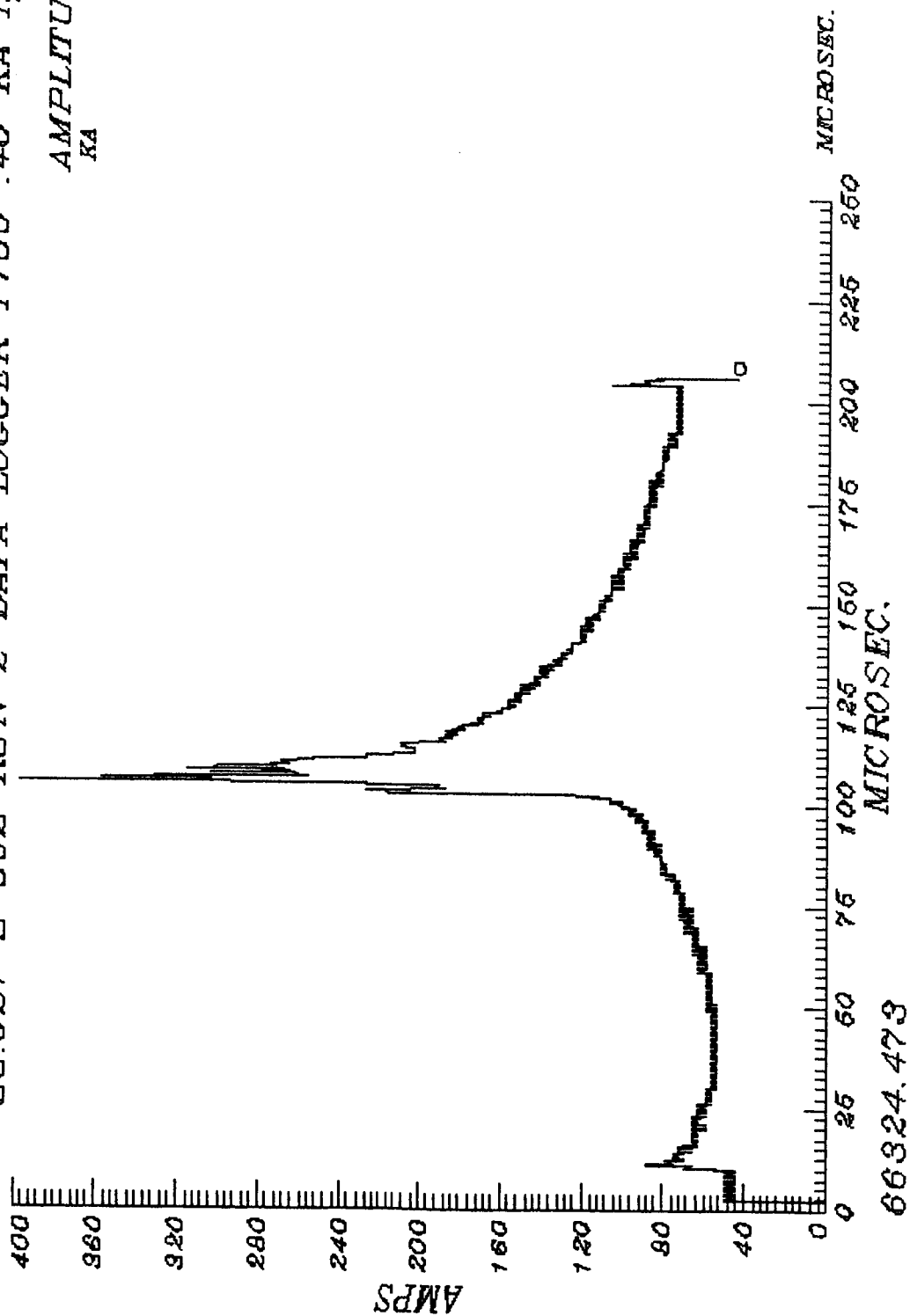
ORIGINAL PAGE IS
OF POOR QUALITY

89.021 S-002 RUN 2 DATA LOGGER T99 1.0 KA I_T

AMPLITUDE
RA 1

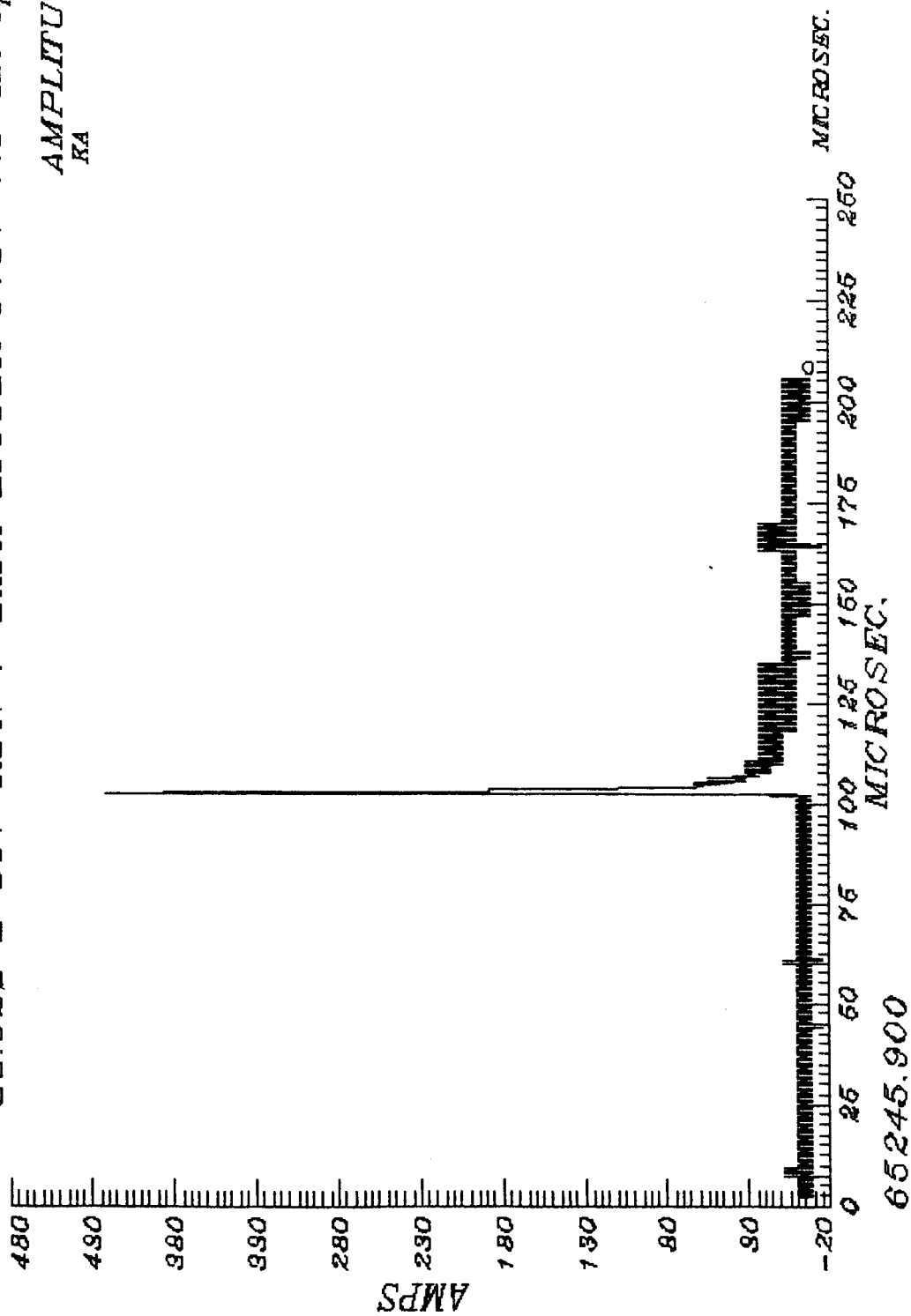


83.021 S-002 RUN 2 DATA LOGGER T100 .40 KA I_T
AMPLITUDE
KA 1



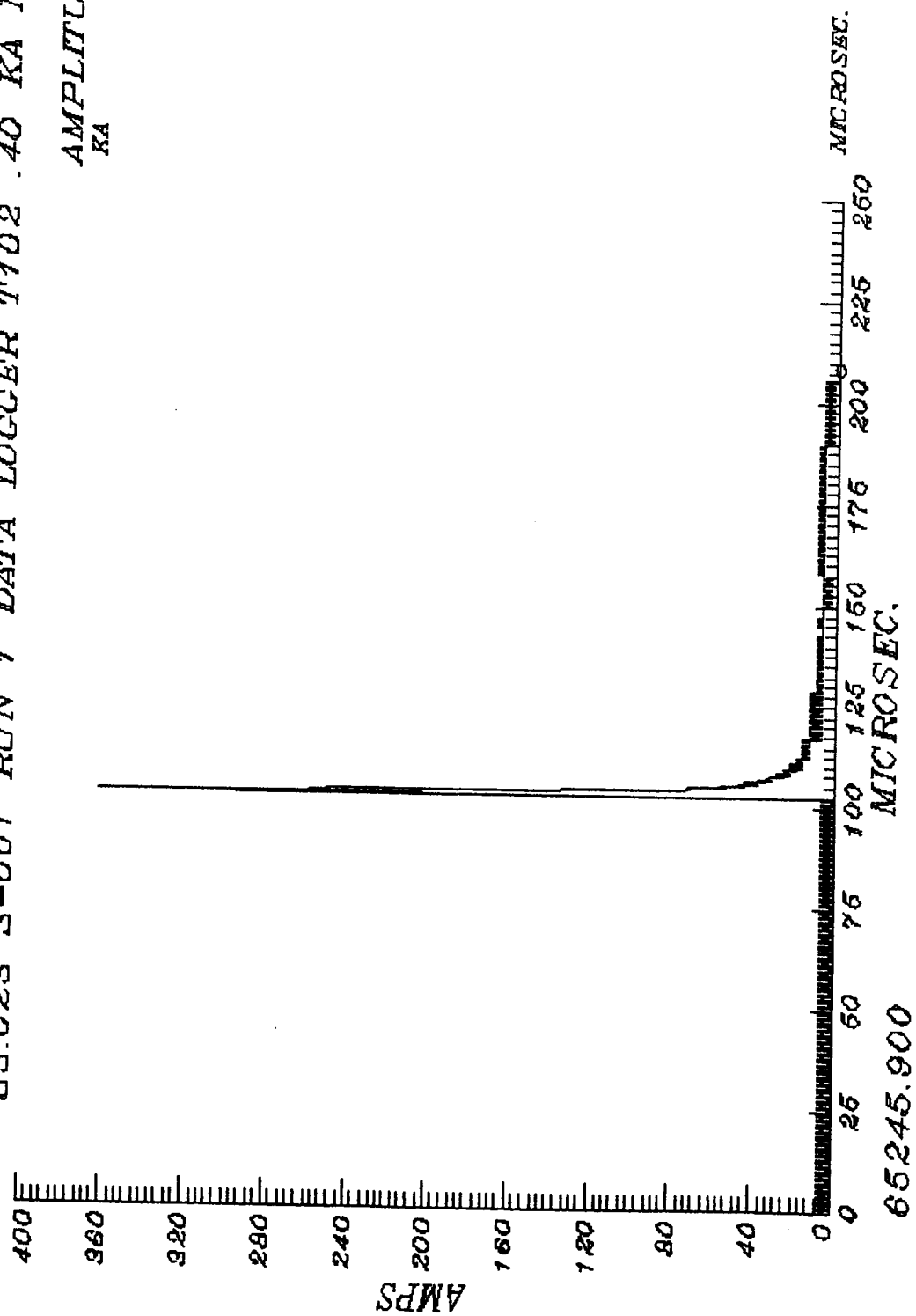
83.023 S-001 RUN 1 DATA LOGGER T101 1.0 KA I_T

AMPLITUDE
RA 1

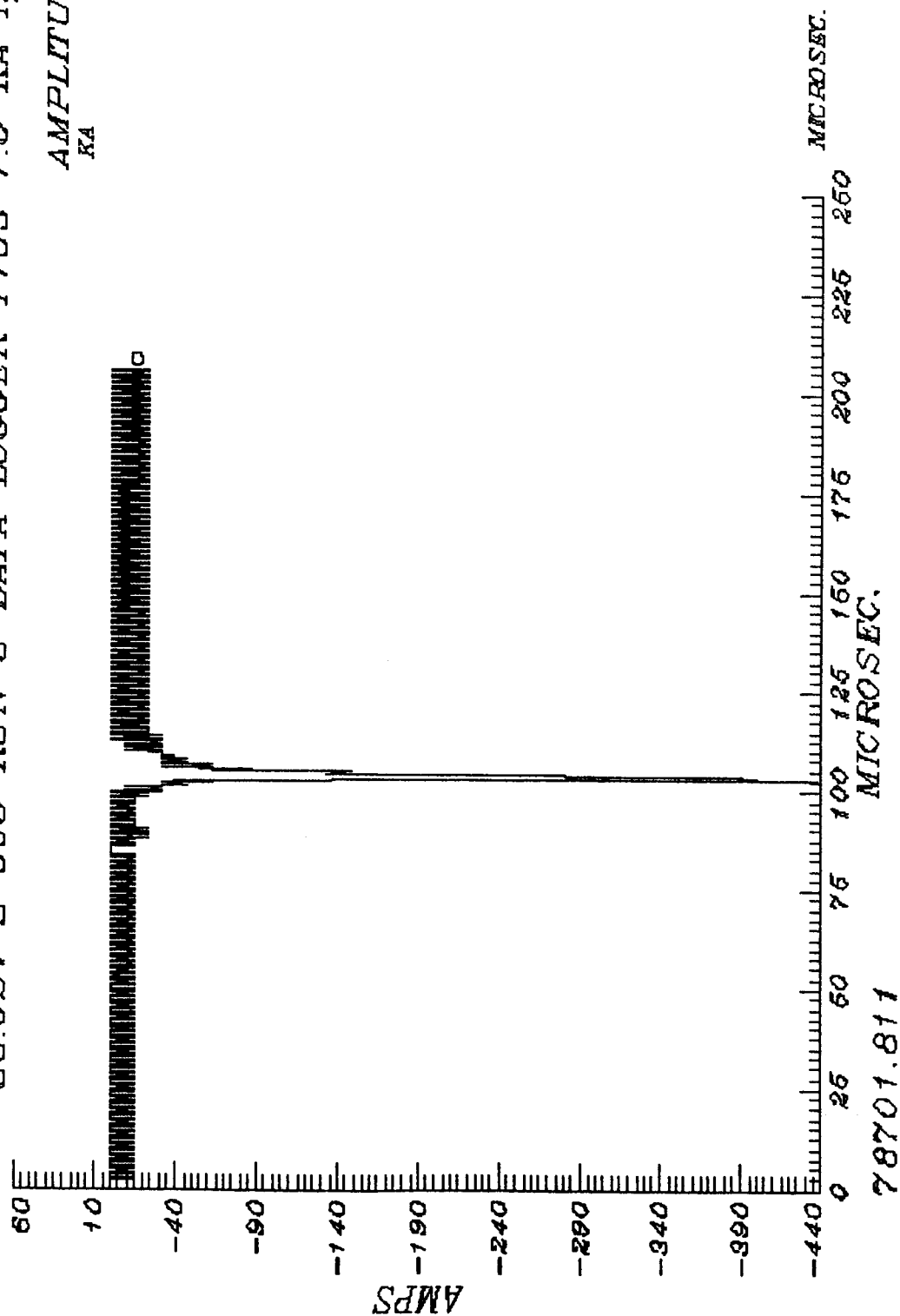


82.023 S-001 RUN 1 DATA LOGGER T102 .40 KA I_T

AMPLITUDE
KA 1



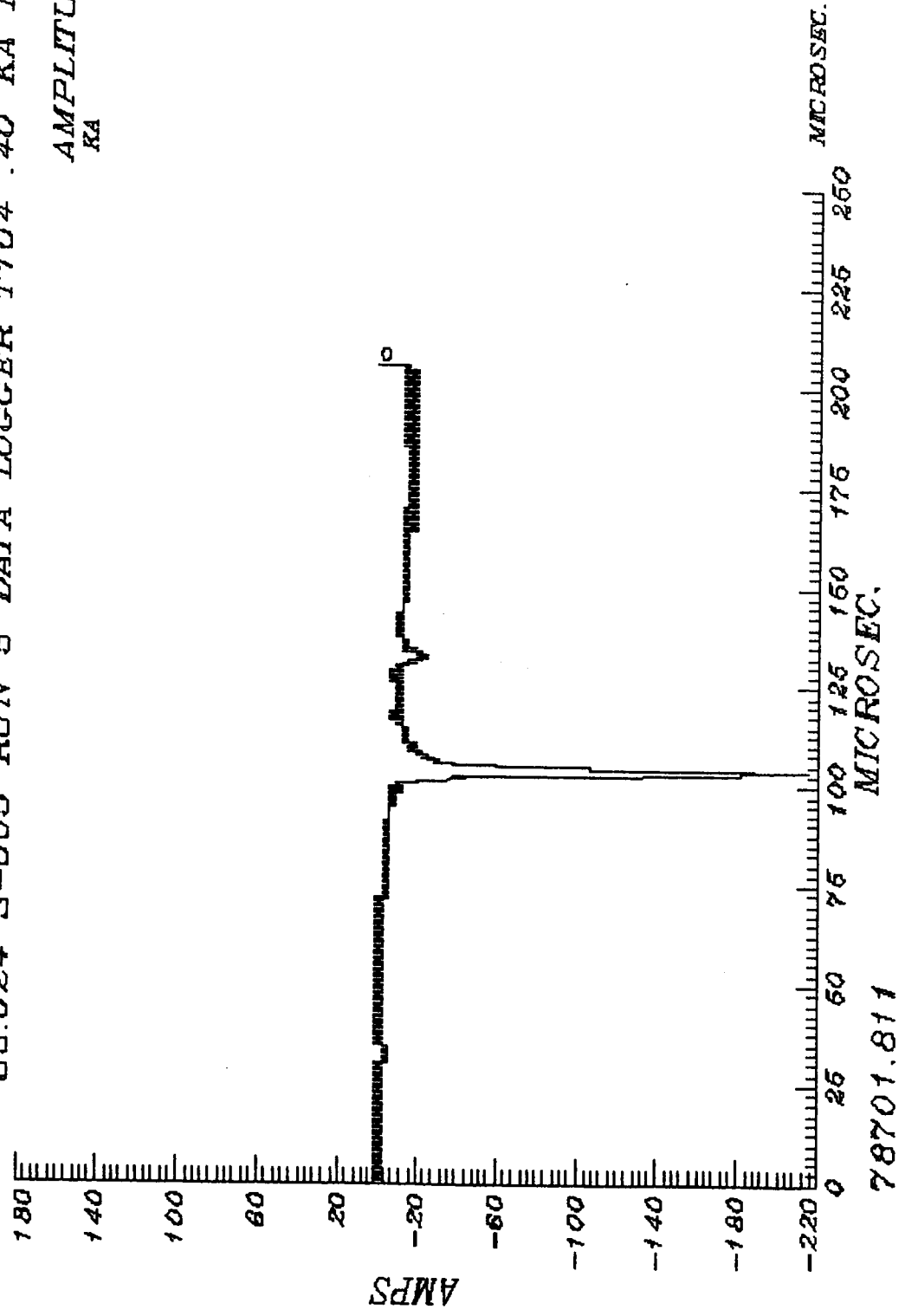
83.024 S-005 RUN 5 DATA LOGGER T103 1.0 KA I_T
AMPLITUDE
KA



78701.811

83.024 S-005 RUN 5 DATA LOGGER T104 .40 KA I_T

AMPLITUDE
KA 1

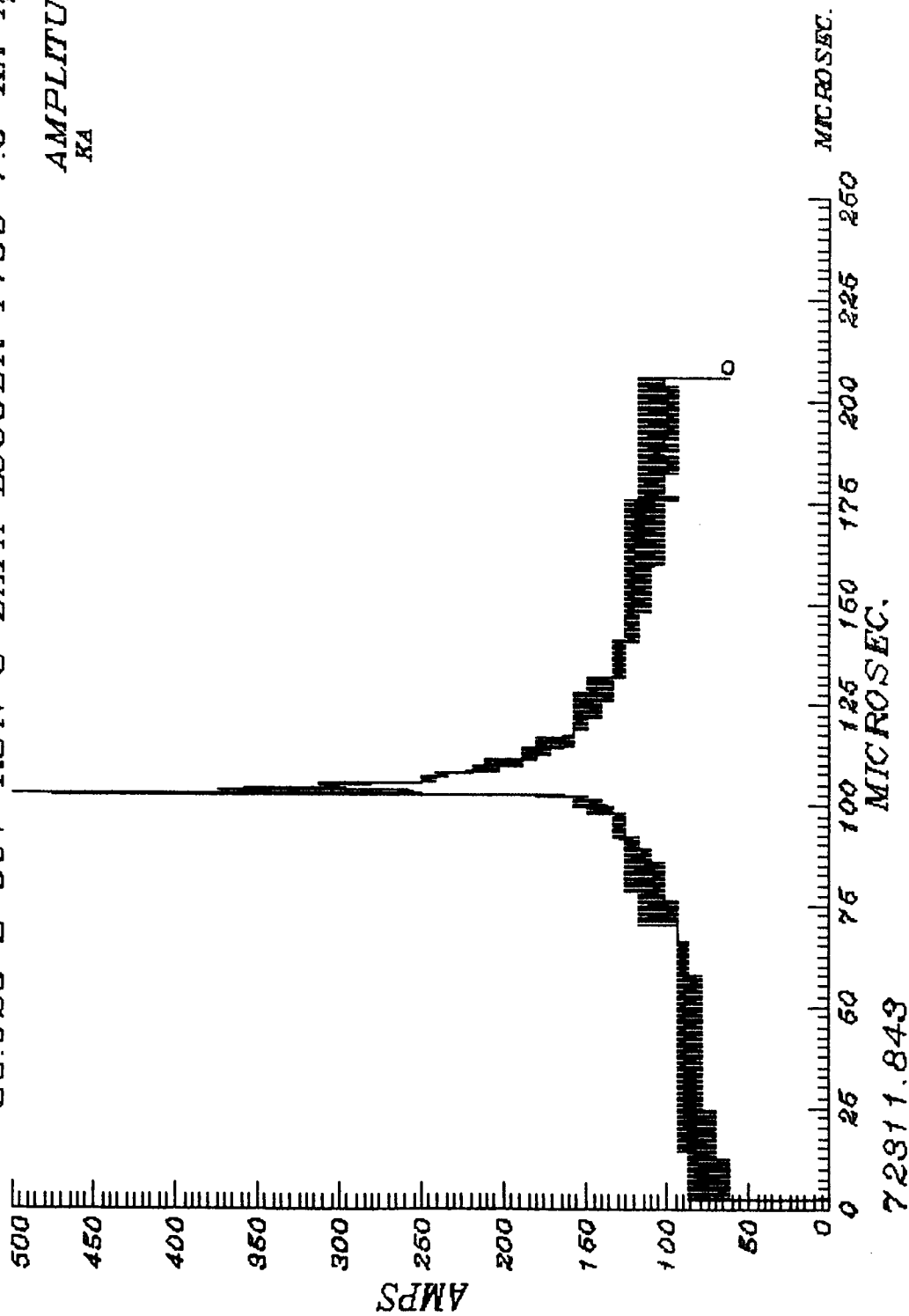


78701.811

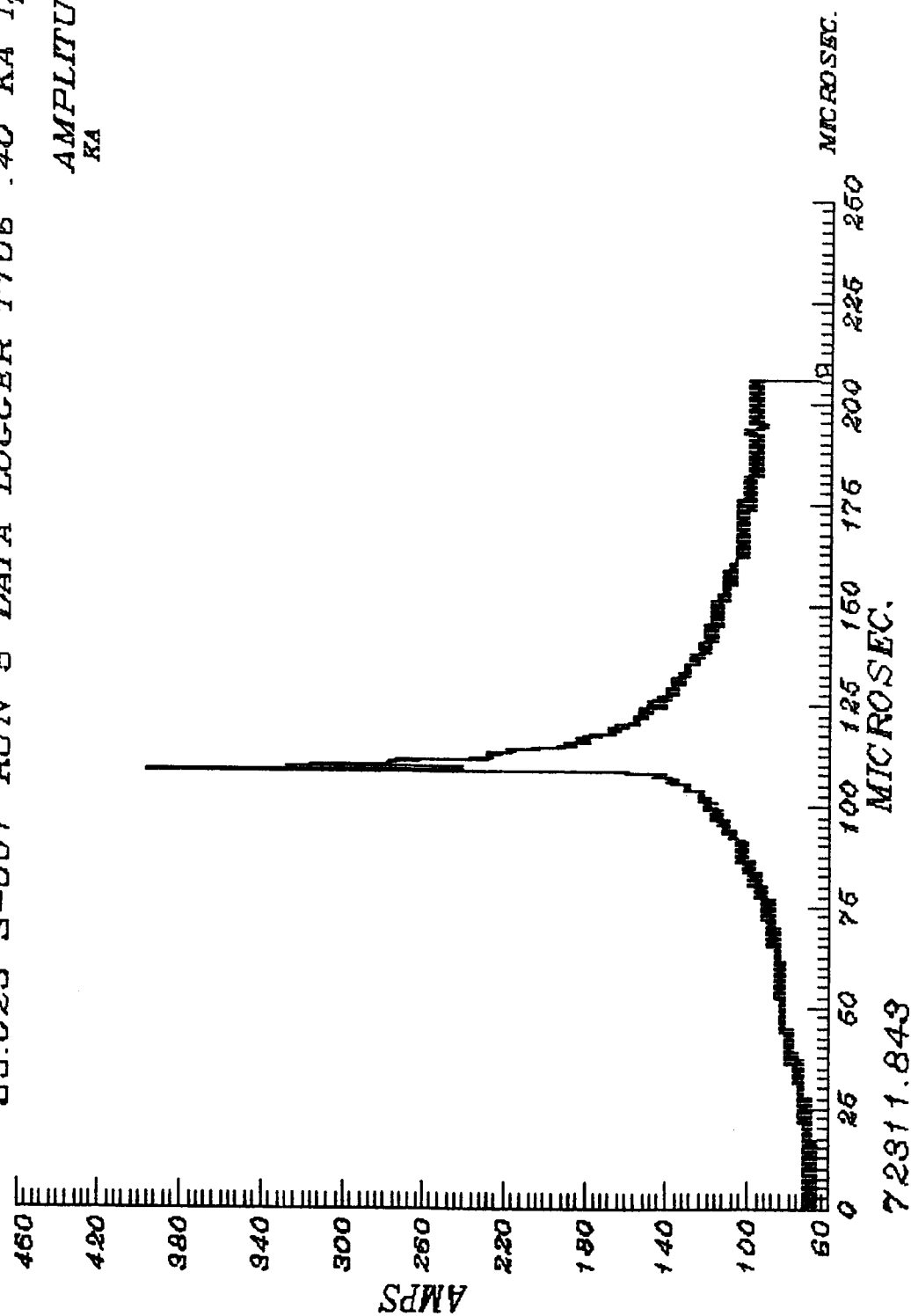
AMPS

MICROSEC.

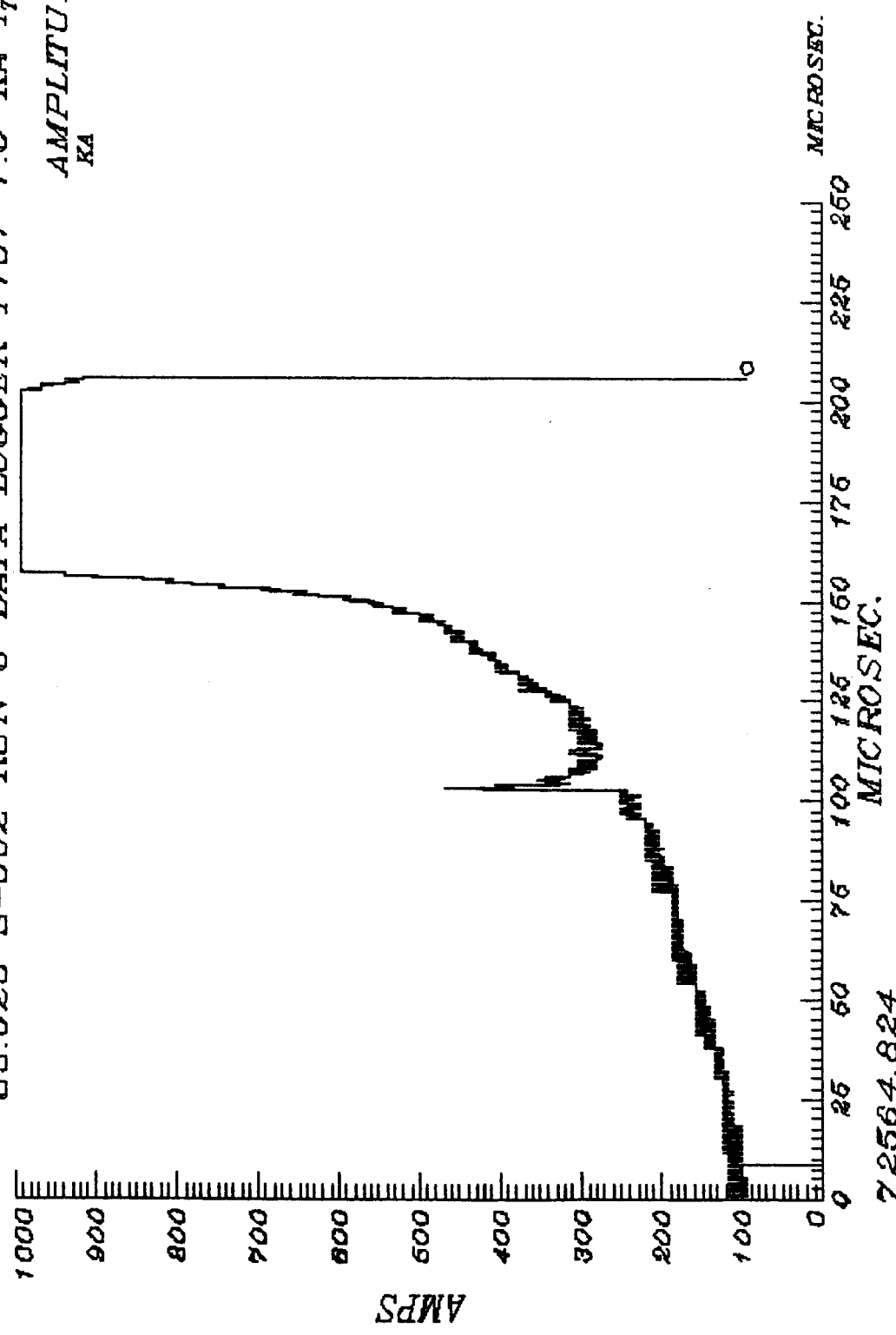
89.025 S-001 RUN 5 DATA LOGGER T105 1.0 KA I_T
AMPLITUDE
KA 1



89.025 S-001 RUN 5 DATA LOGGER T106 .40 KA I_T
 AMPLITUDE
 KA 1

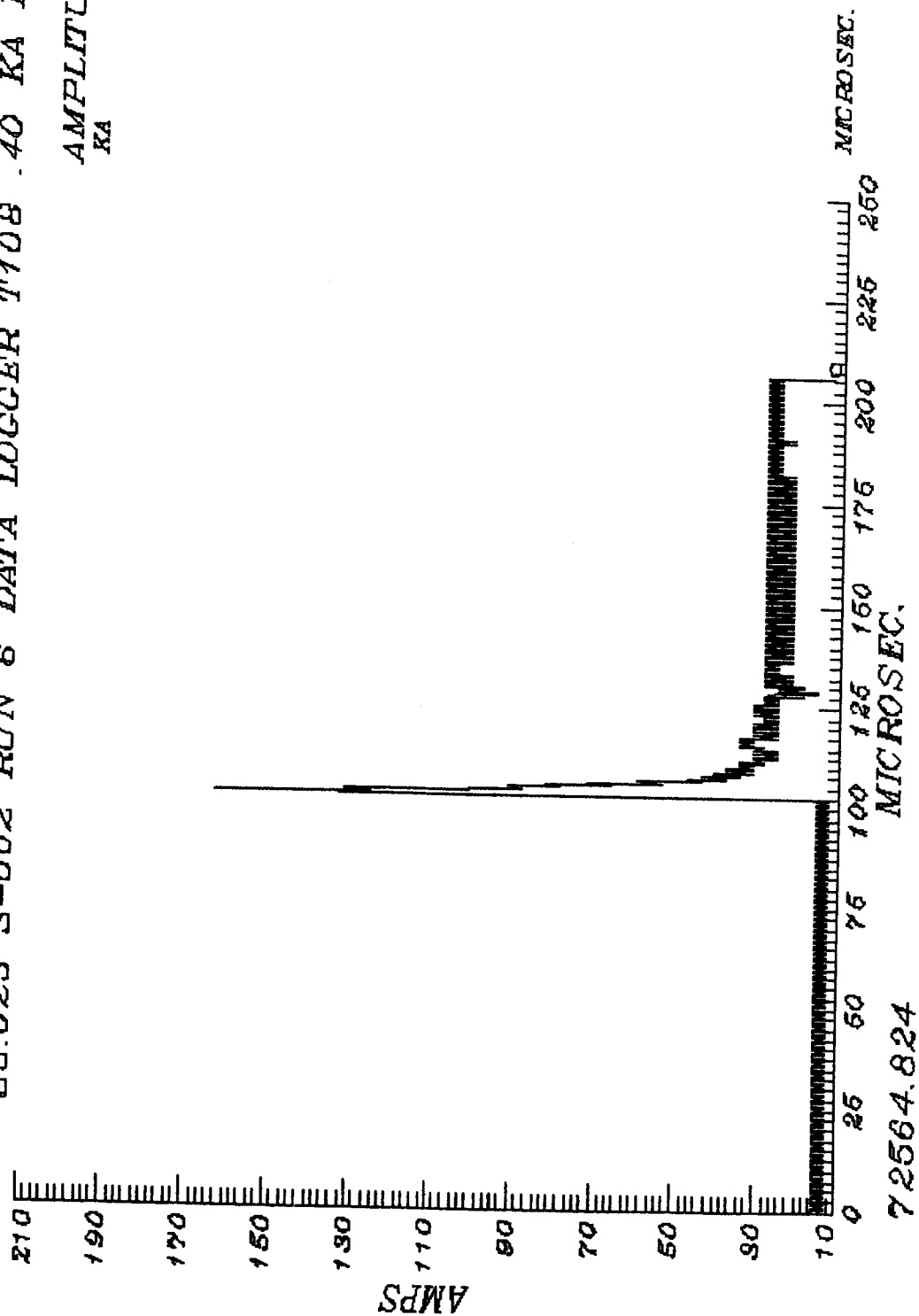


83.025 S-002 RUN 6 DATA LOGGER T107 1.0 KA I_T
AMPLITUDE
KA



72564.824

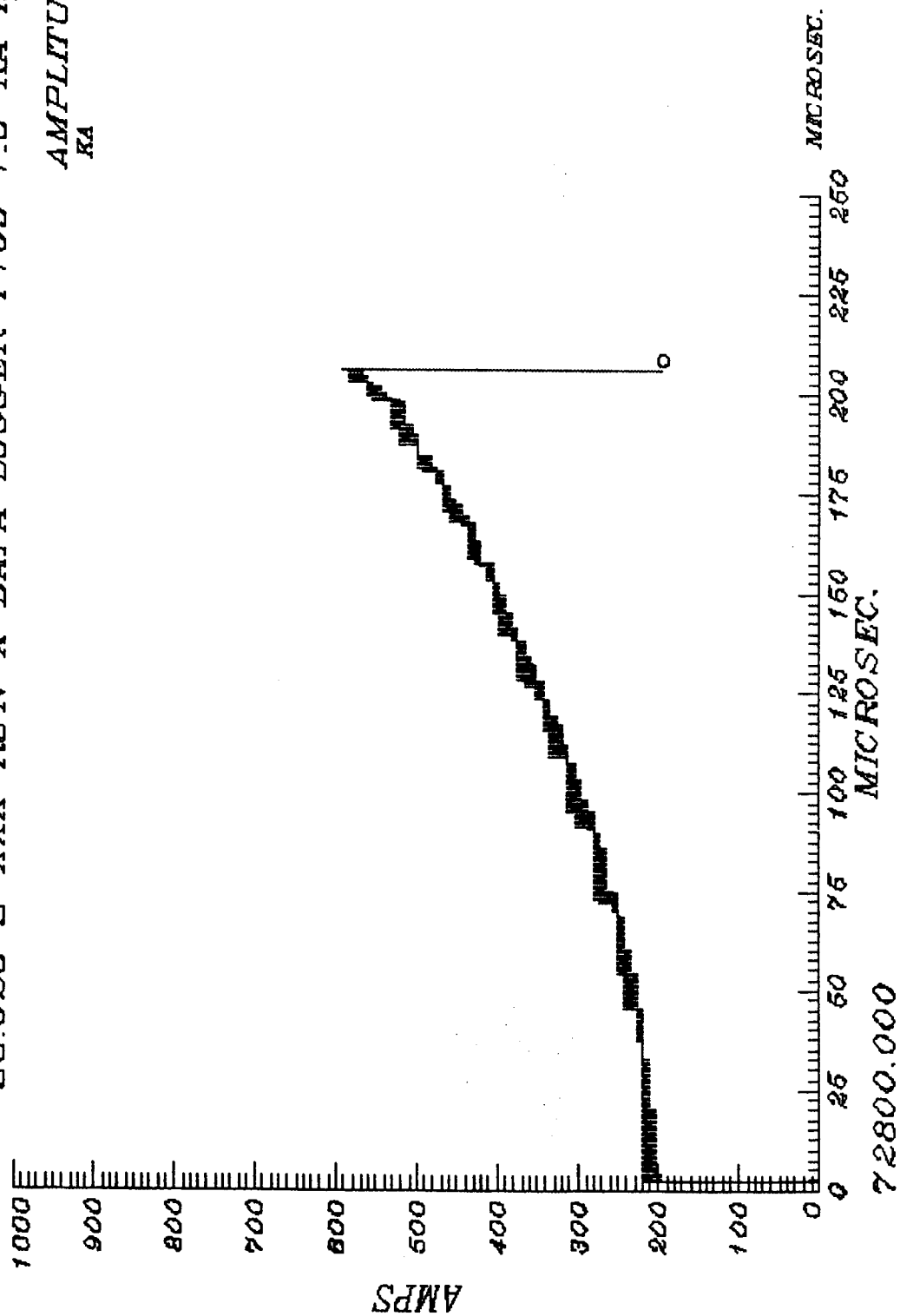
89.025 S-002 RUN 6 DATA LOGGER T108 .40 KA I_T
AMPLITUDE
RA 1



72564.824

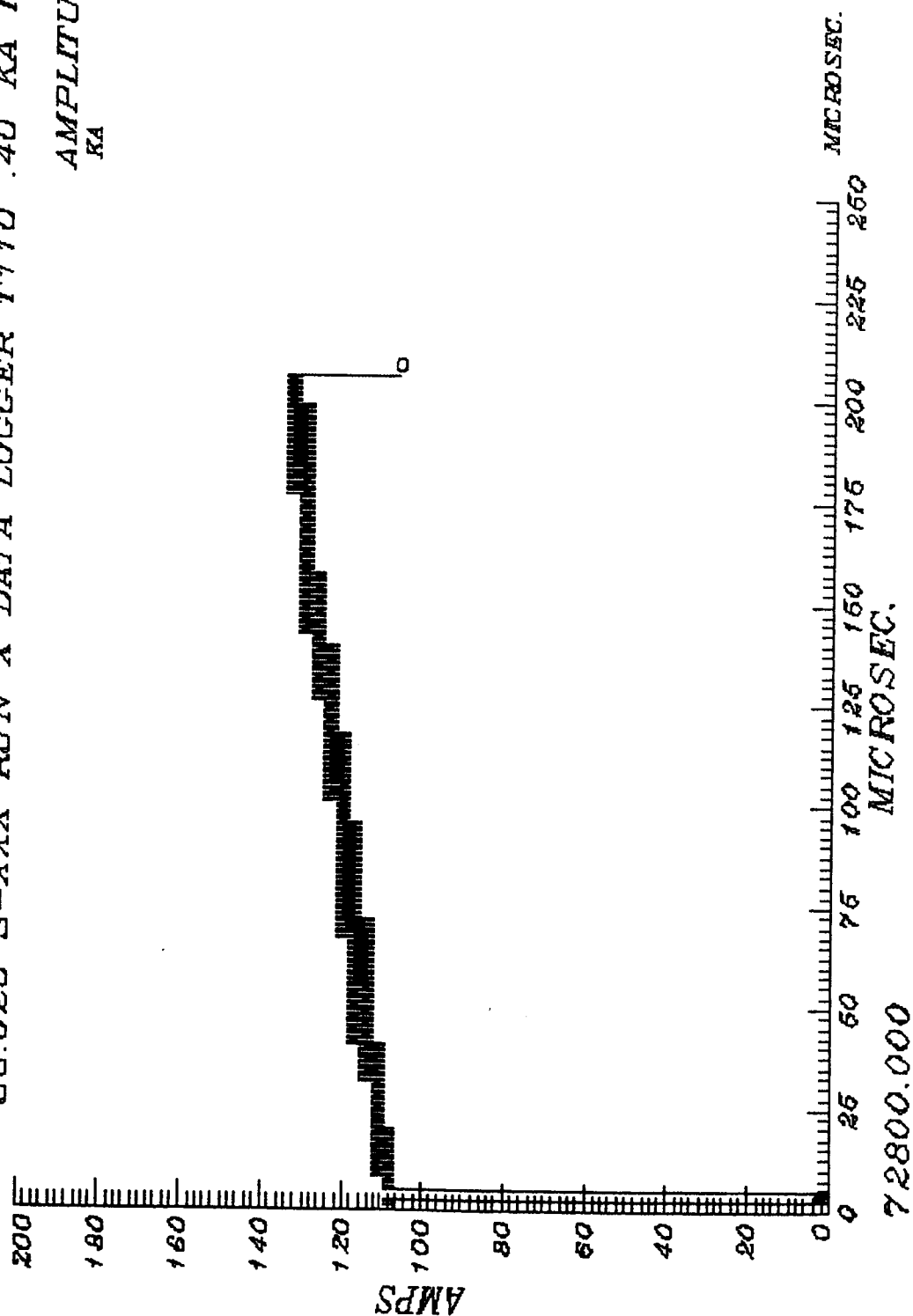
83.025 S-XXX RUN X DATA LOGGER T109 1.0 KA I_T

AMPLITUDE
KA 1

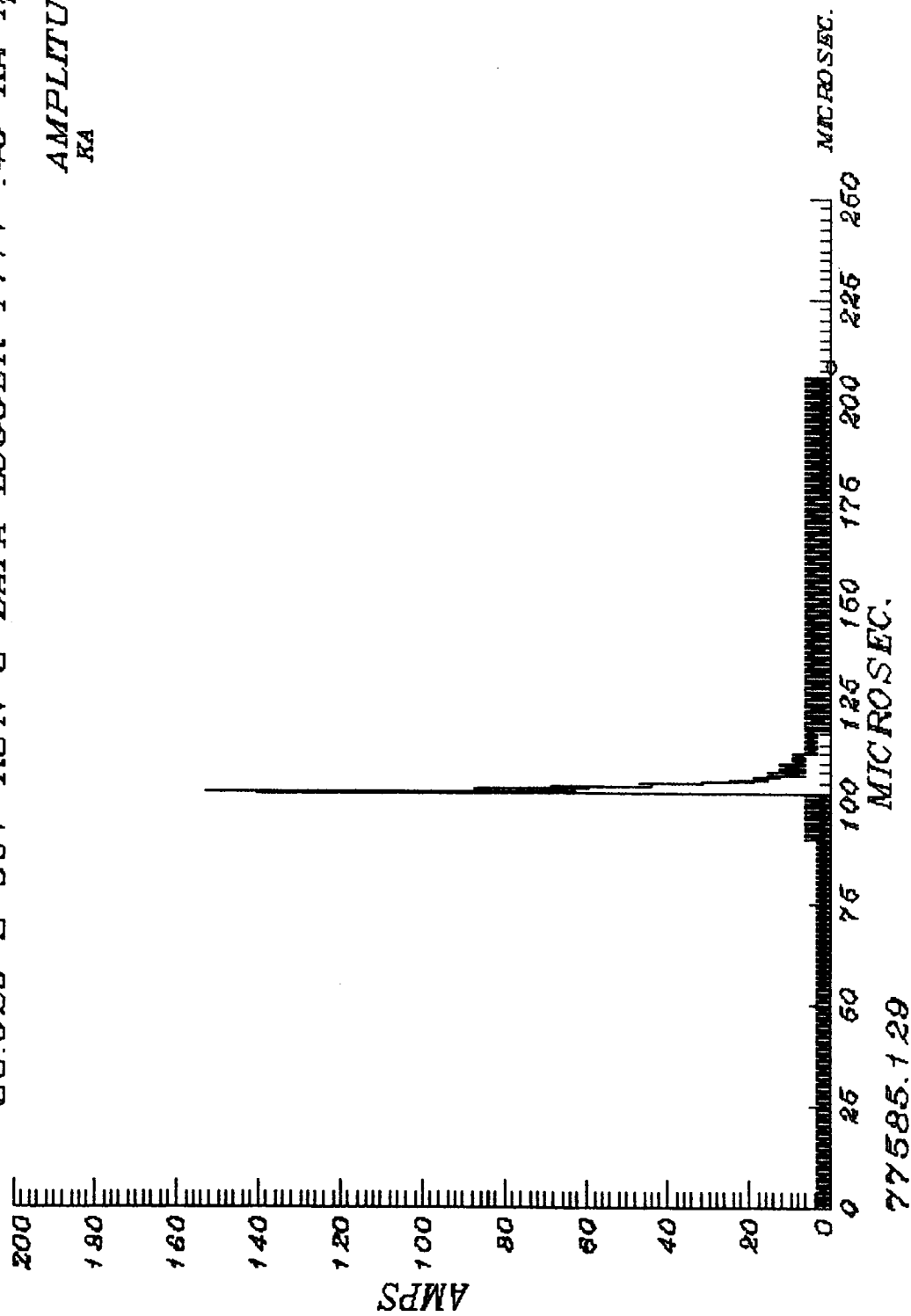


83.025 S-XXX RUN X DATA LOGGER T110 .40 KA I_T

AMPLITUDE
KA 1



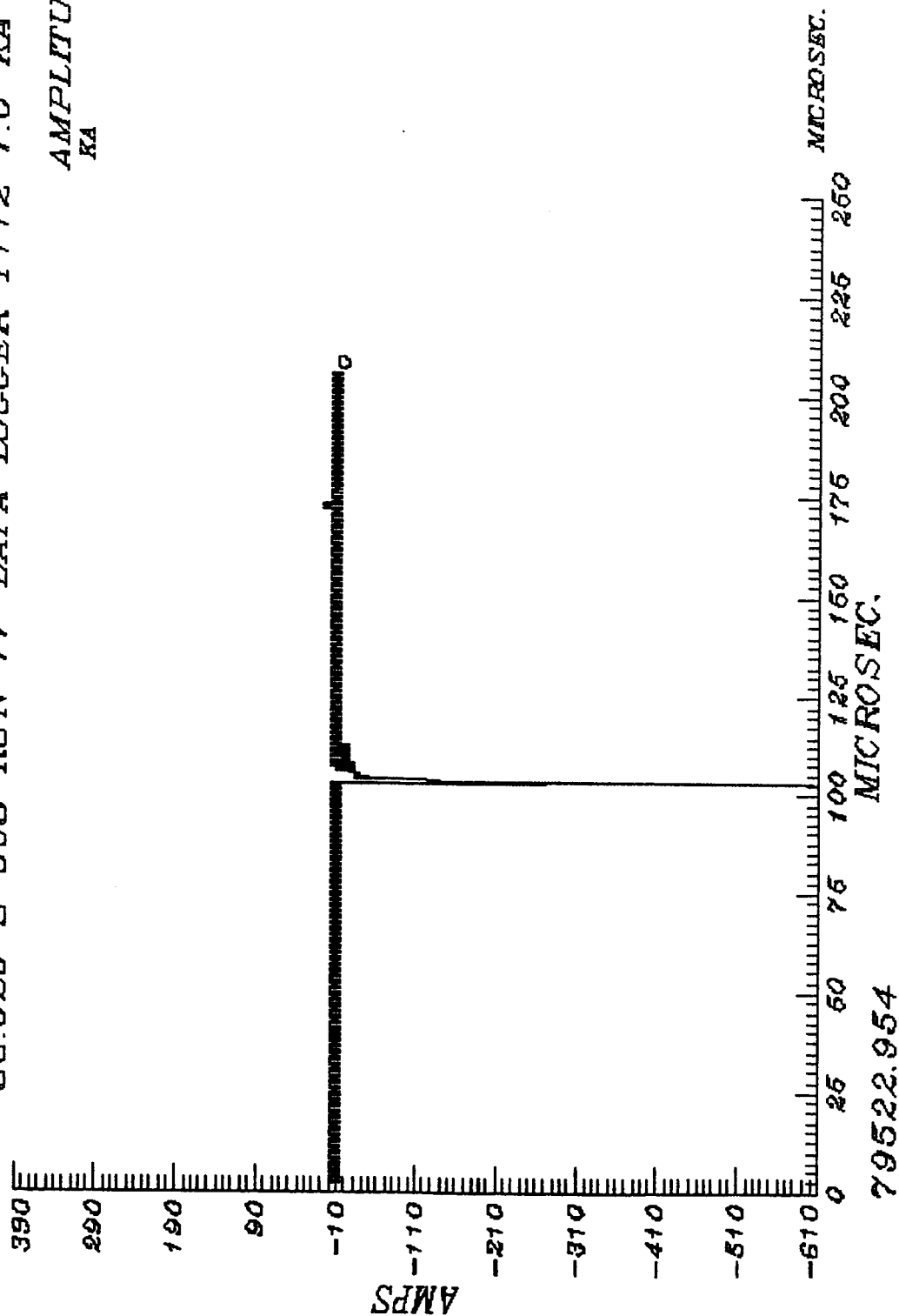
83.029 S-001 RUN 3 DATA LOGGER T111 .40 KA I_T
 AMPLITUDE
 KA 1



77585.129

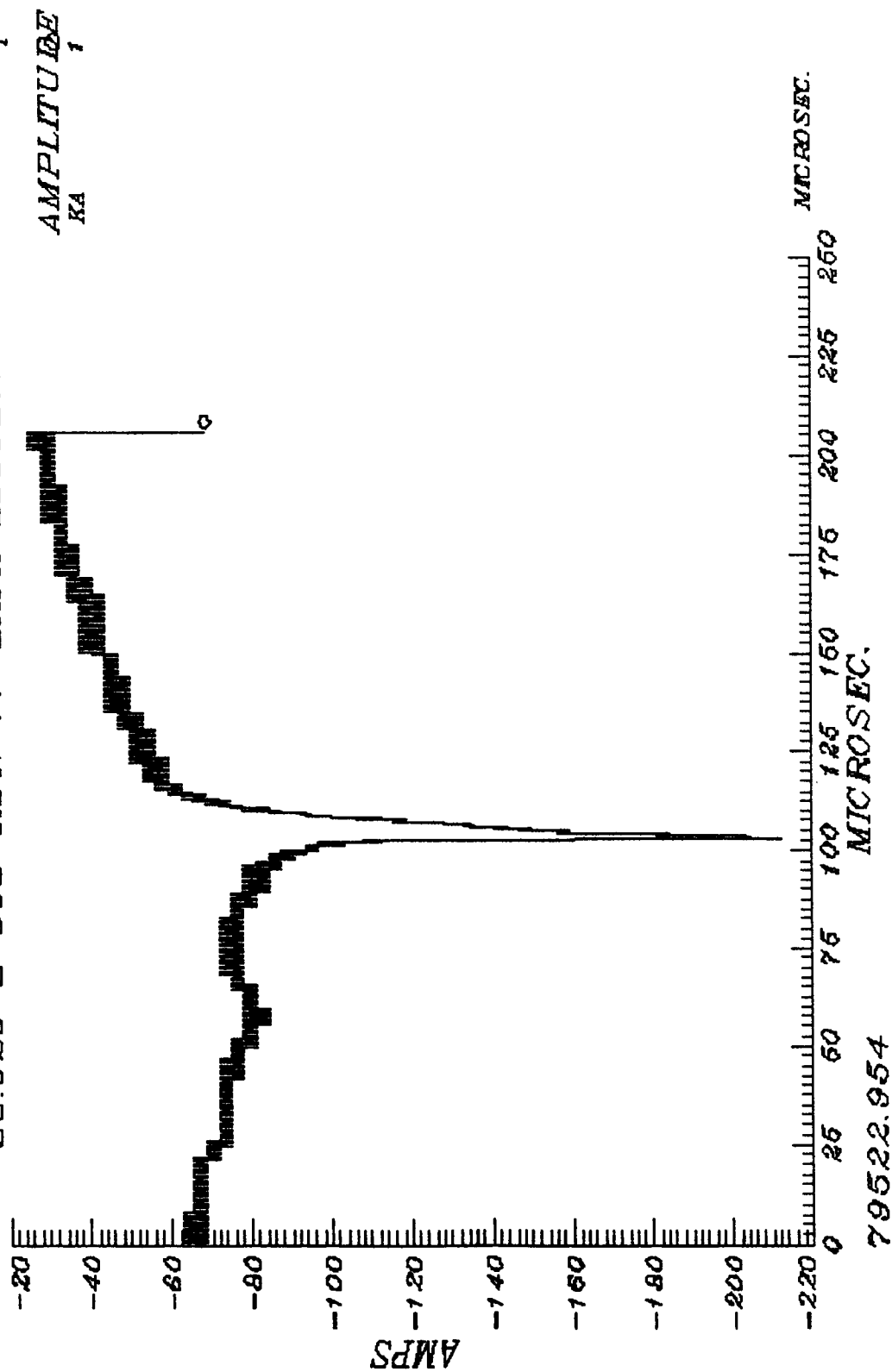
89.029 S-008 RUN 17 DATA LOGGER T112 1.0 KA I_T

AMPLITUDE
RA

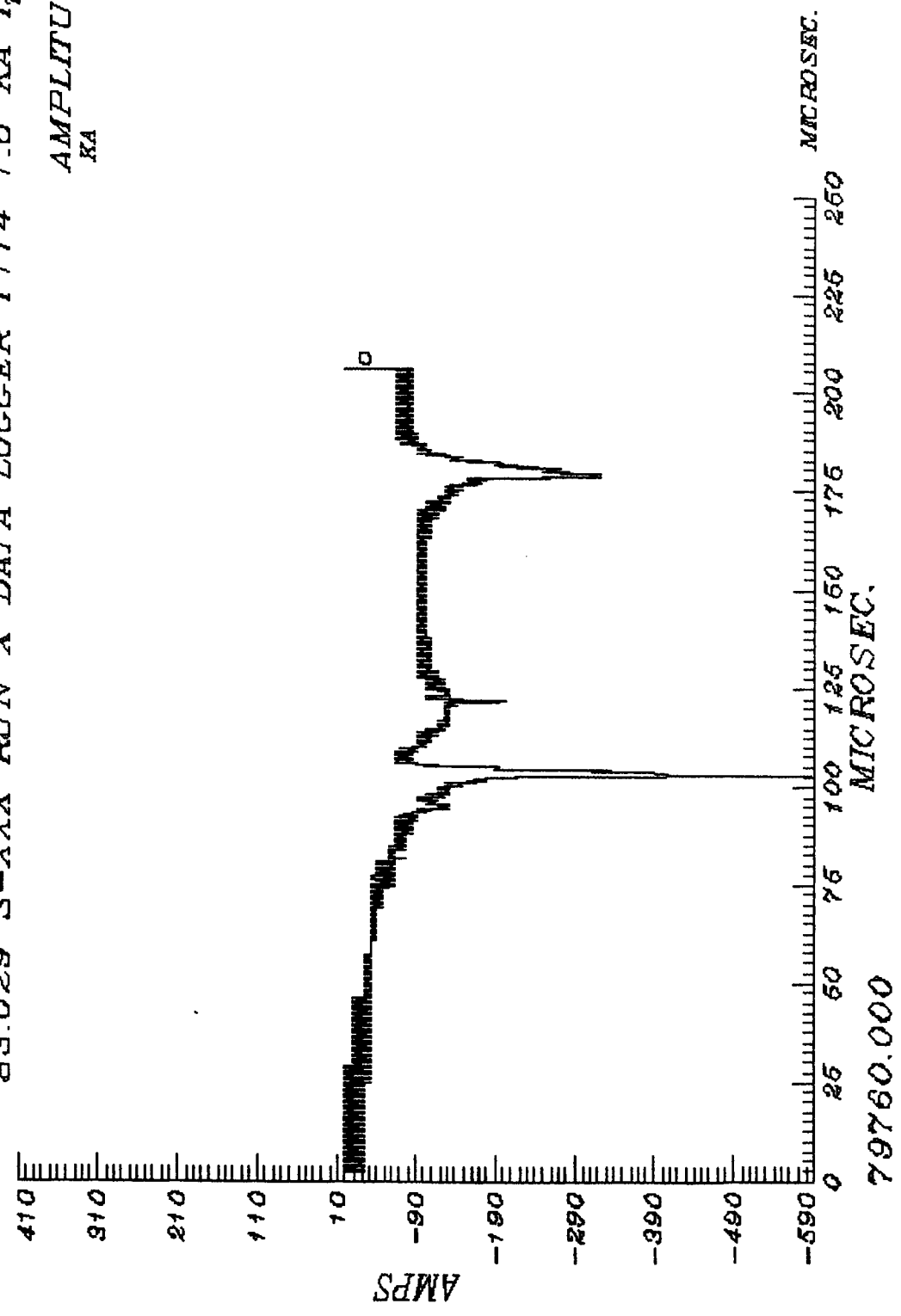


79522.954

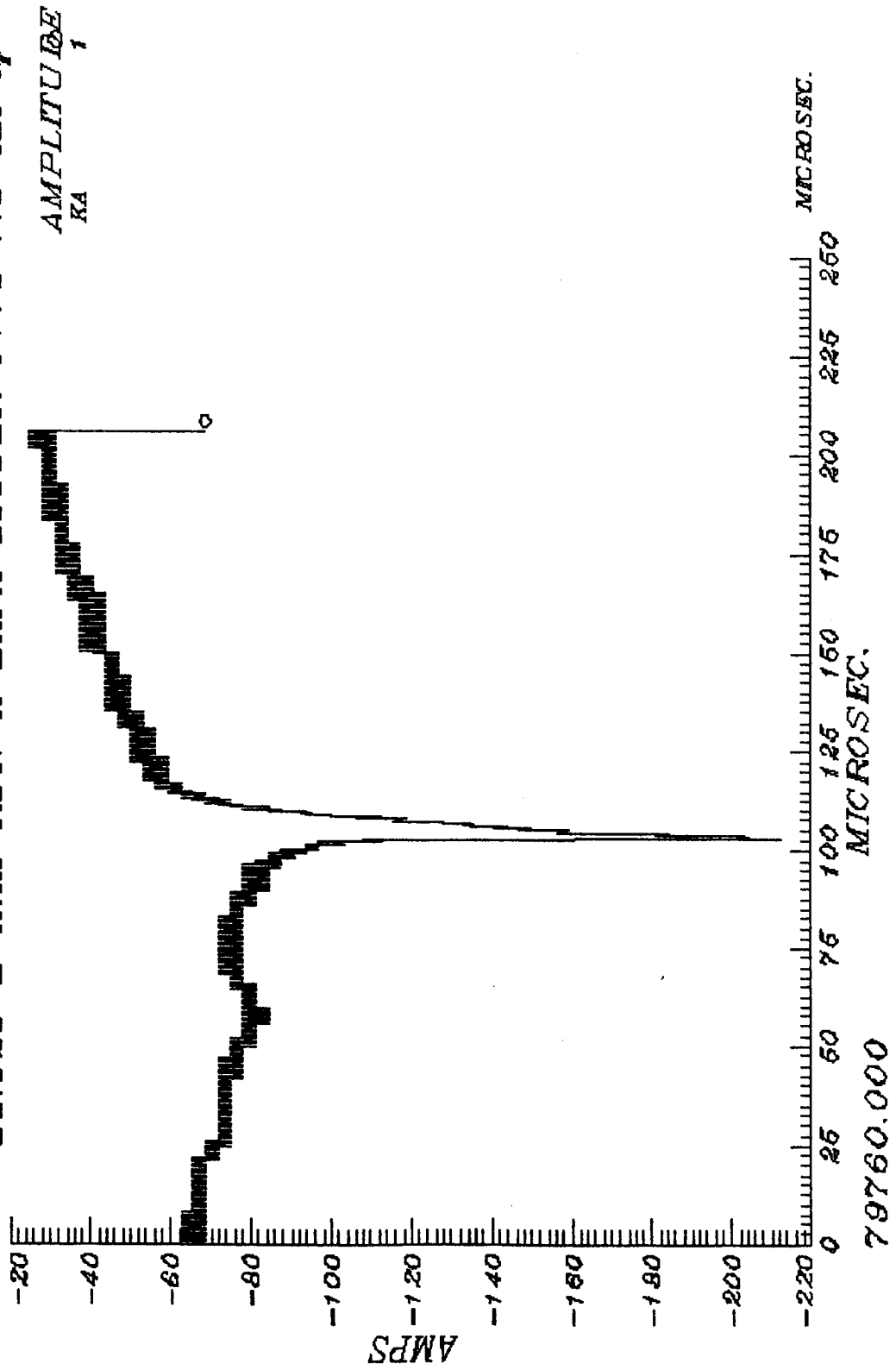
83.029 S-008 RUN 17 DATA LOGGER T113 .40 KA I_T



83.029 S-XXX RUN X DATA LOGGER T114 1.0 KA I_T
AMPLITUDE
KA 1

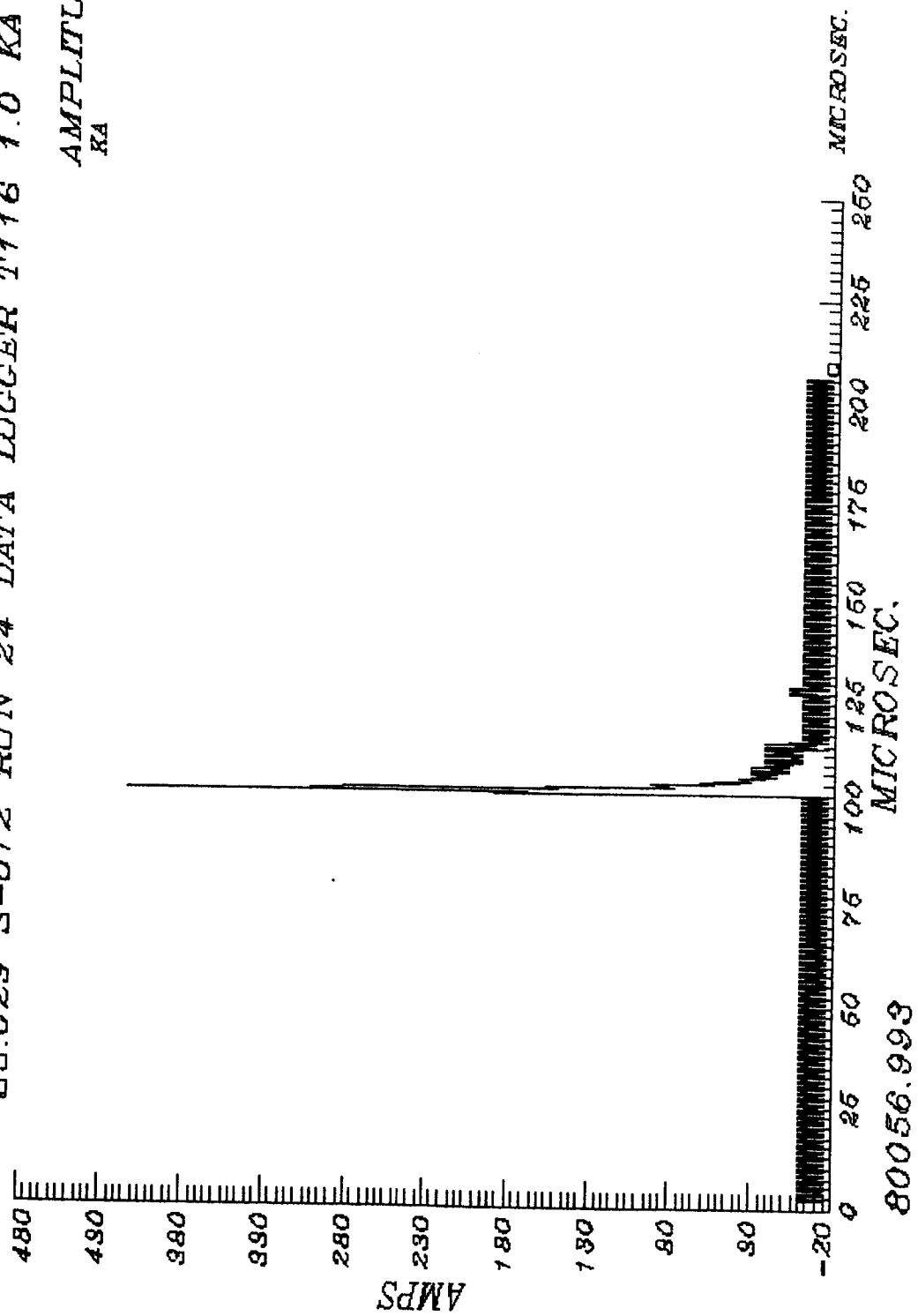


83.029 S-XXX RUN X DATA LOGGER T115 40 KA I₇



83.029 S-012 RUN 24 DATA LOGGER T116 1.0 KA I_T

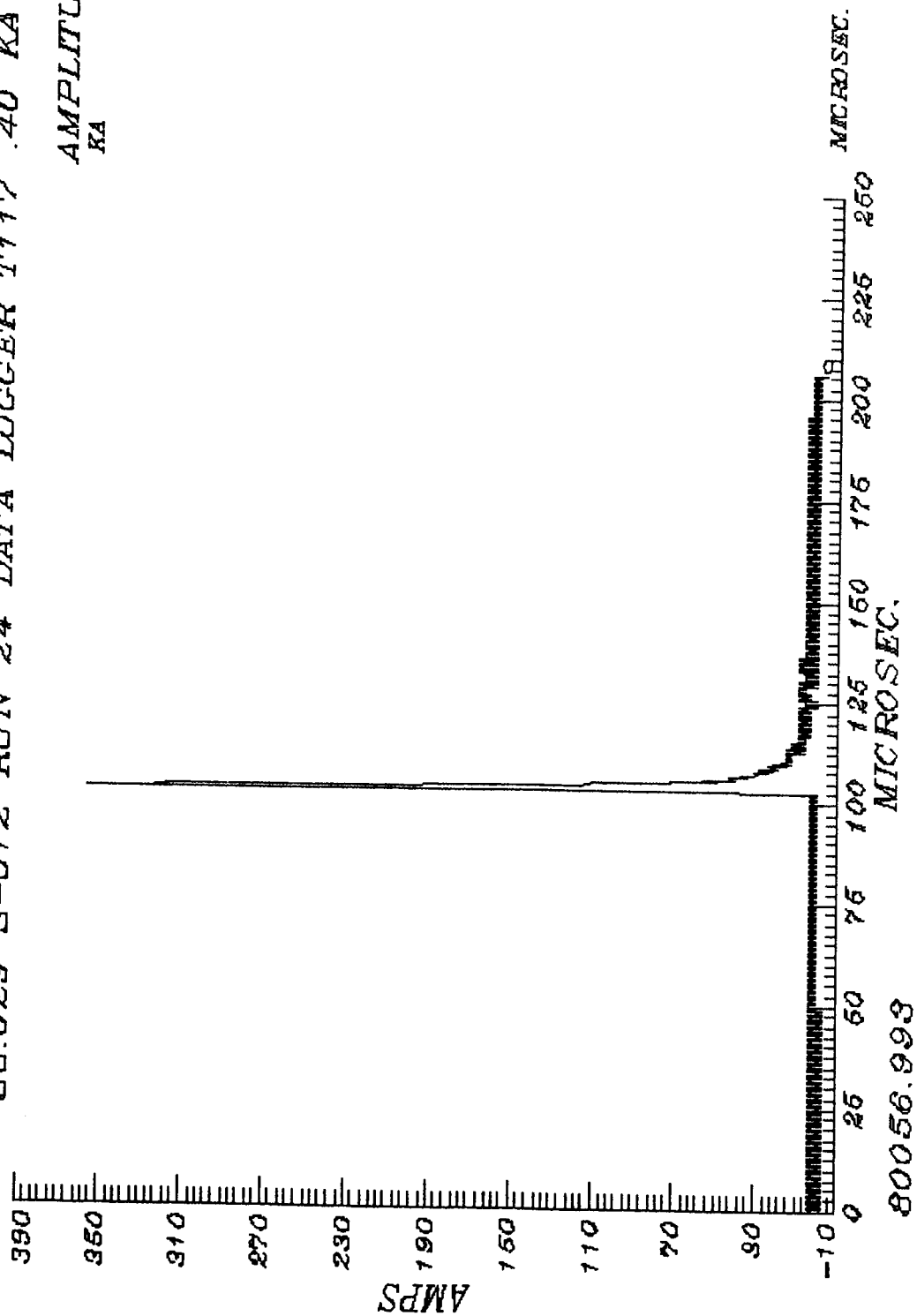
AMPLITUDE
 R_A



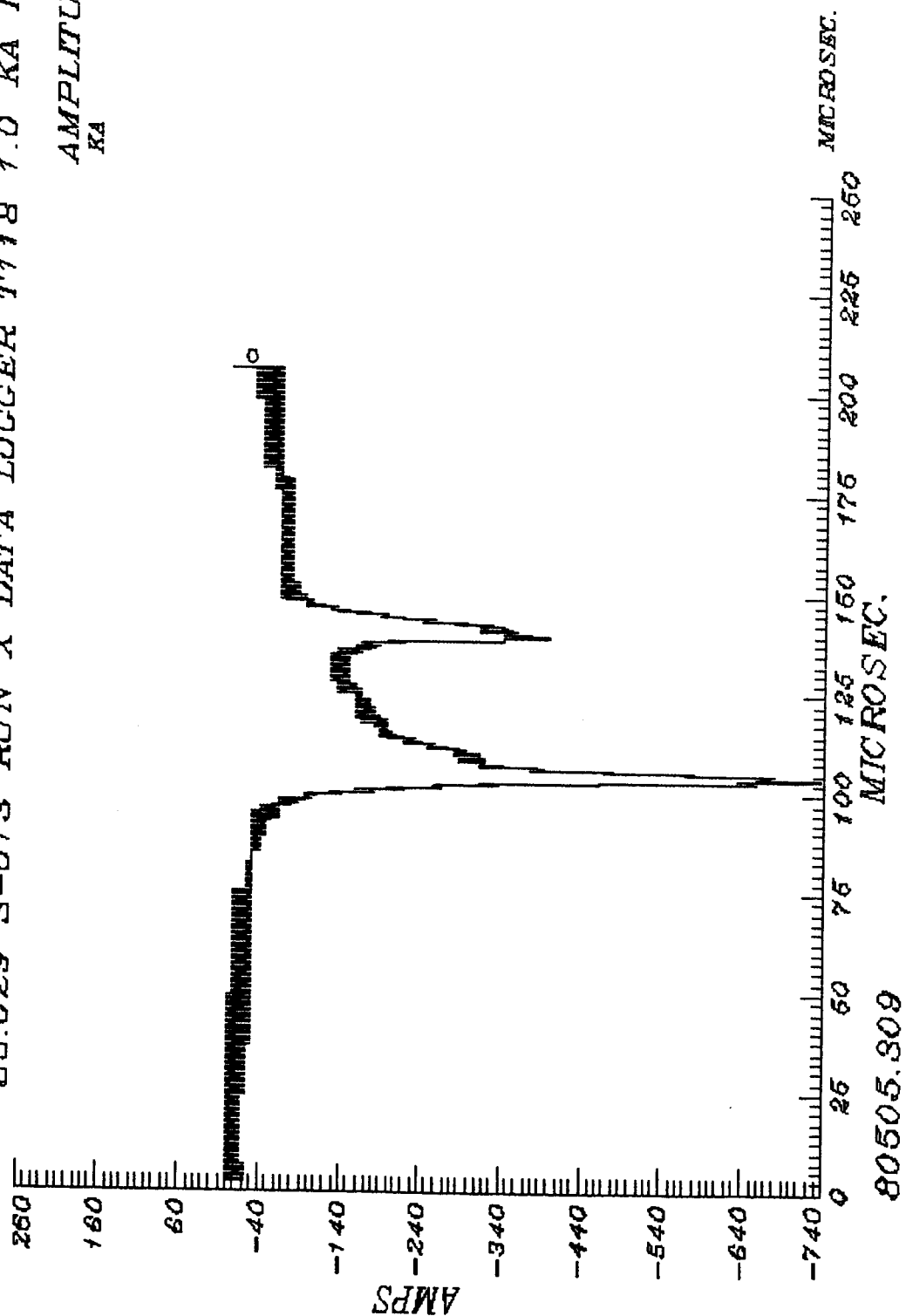
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83.029 S-012 RUN 24 DATA LOGGER T117 .40 KA I_T

AMPLITUDE
KA
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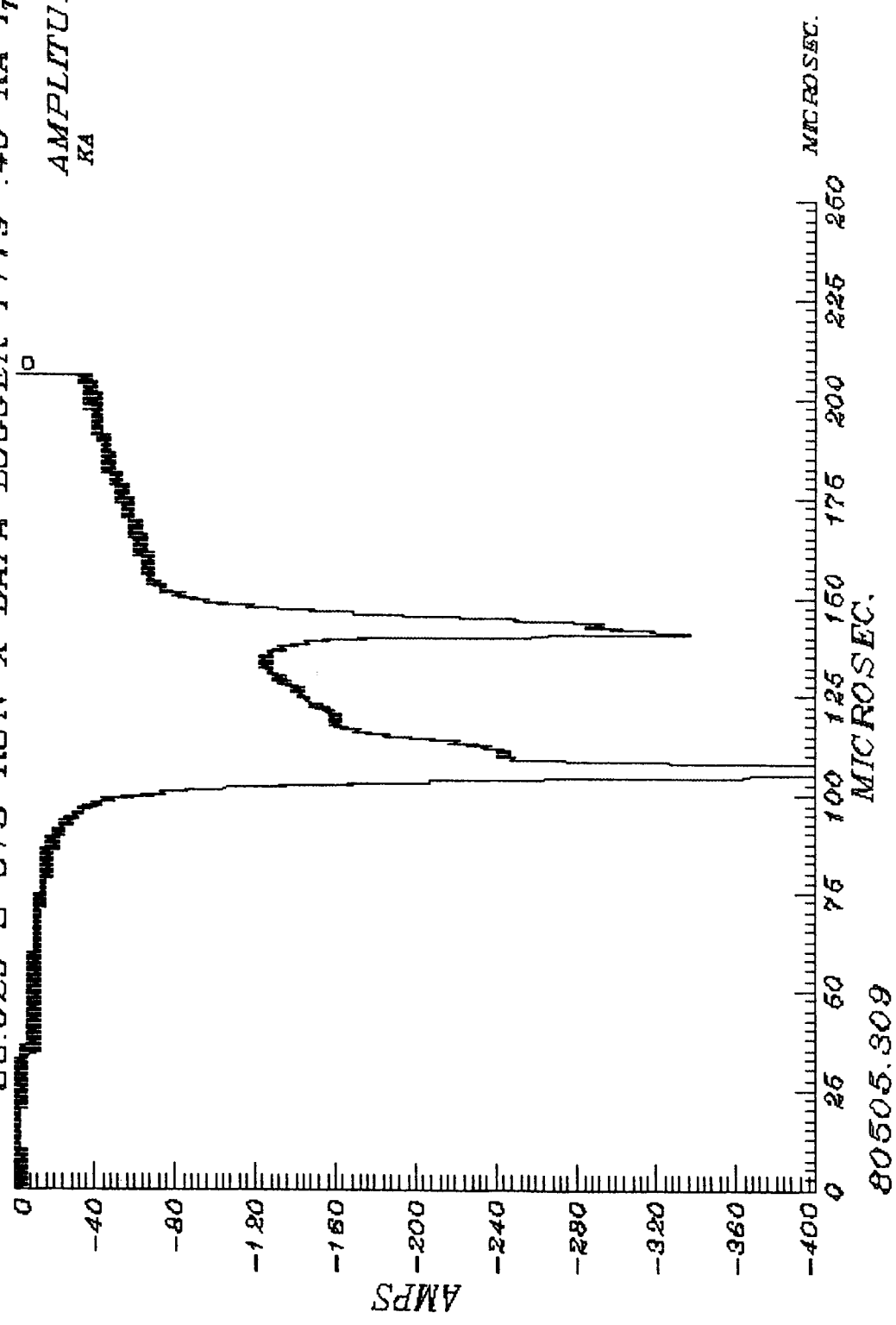
83.029 S-013 RUN X DATA LOGGER T118 1.0 KA I_T
AMPLITUDE
KA 1



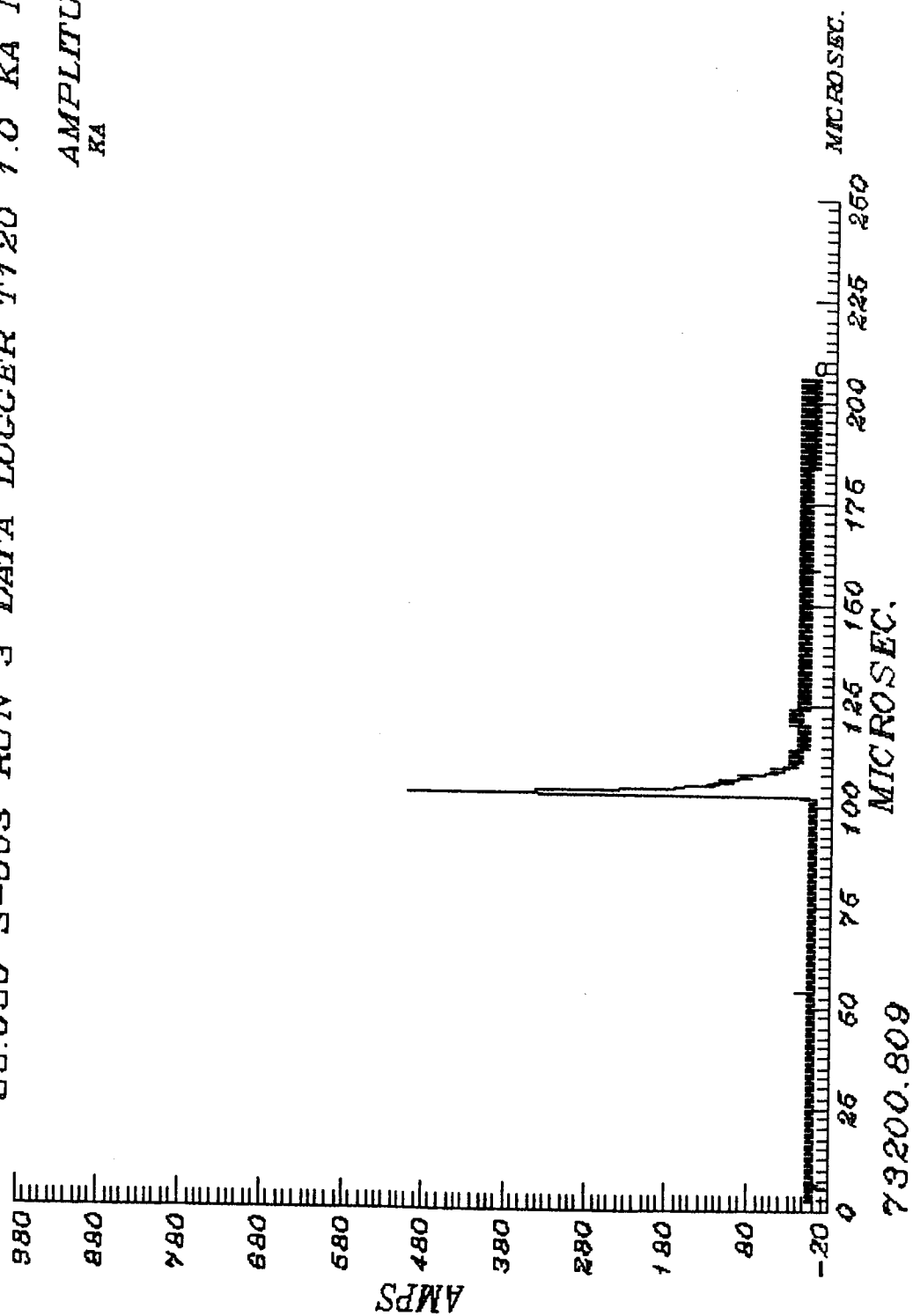
80505.309

83.029 S-013 RUN X DATA LOGGER T119 .40 KA I_T

AMPLITUDE
KA 1



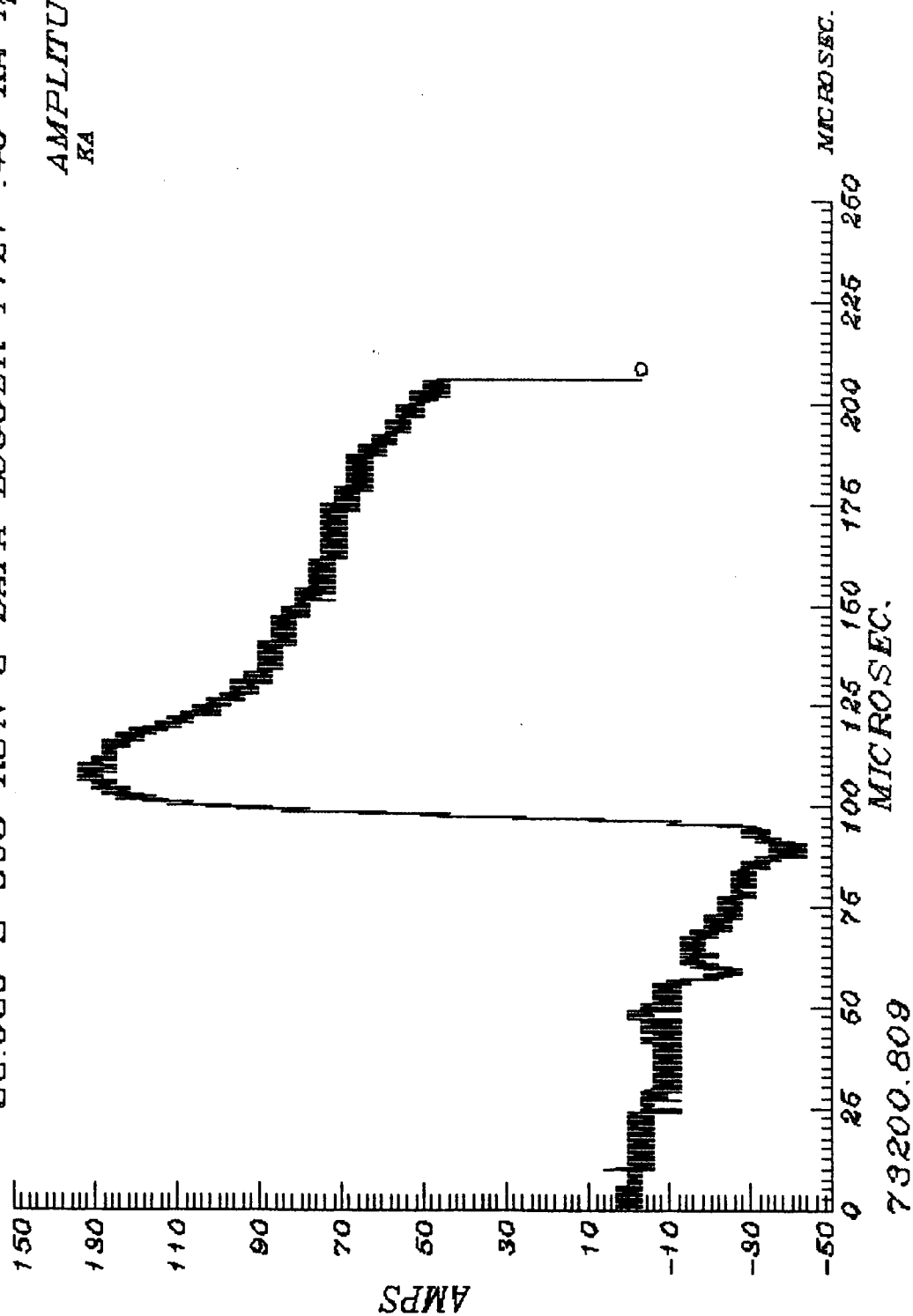
83.030 S-003 RUN 3 DATA LOGGER T120 1.0 KA I_T
 AMPLITUDE
 KA 1



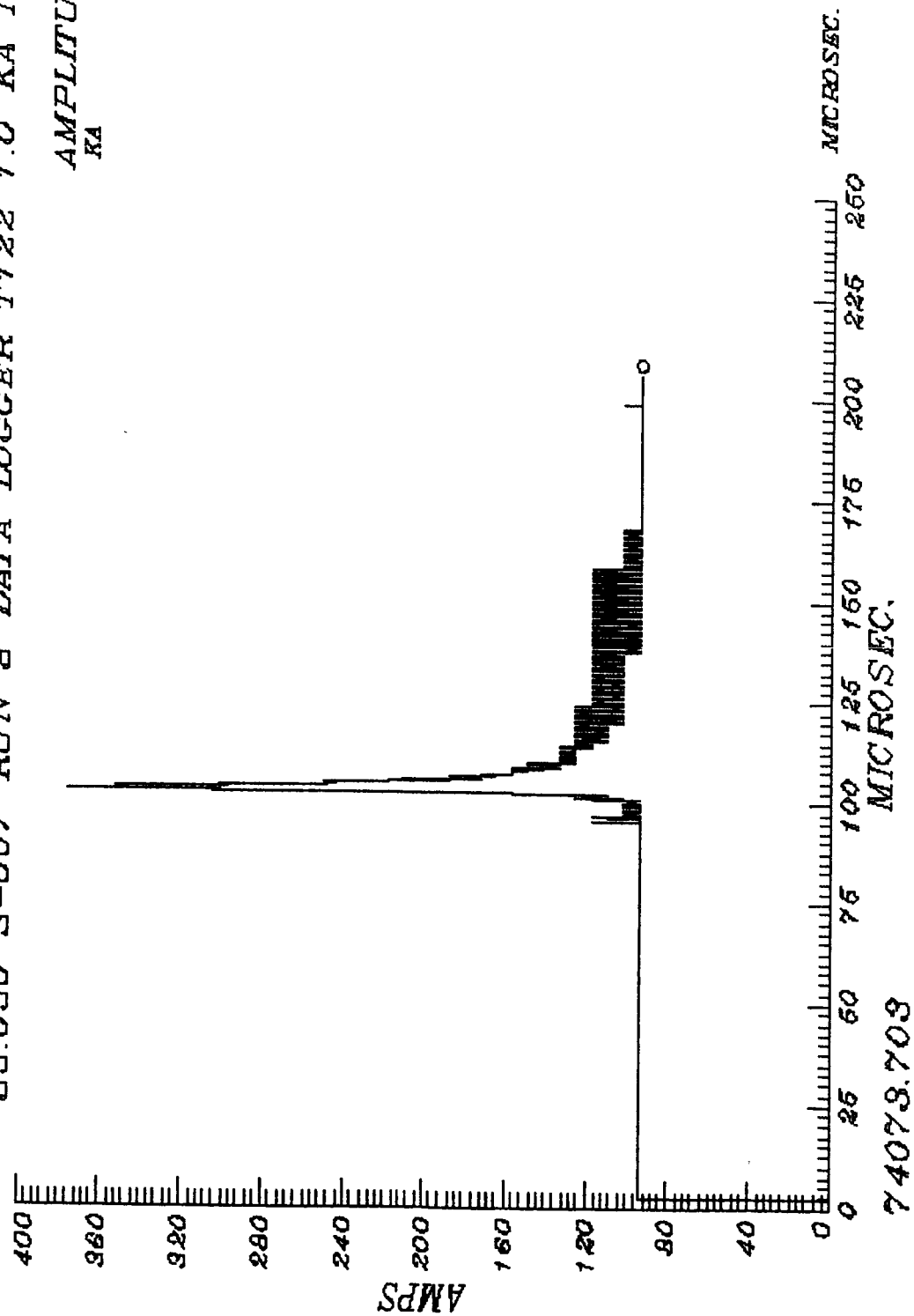
73200.809

89.030 S-003 RUN 3 DATA LOGGER T121 .40 KA I_T

AMPLITUDE
KA 1



83.030 S-007 RUN 8 DATA LOGGER T122 1.0 KA I_T
 AMPLITUDE
 KA 1



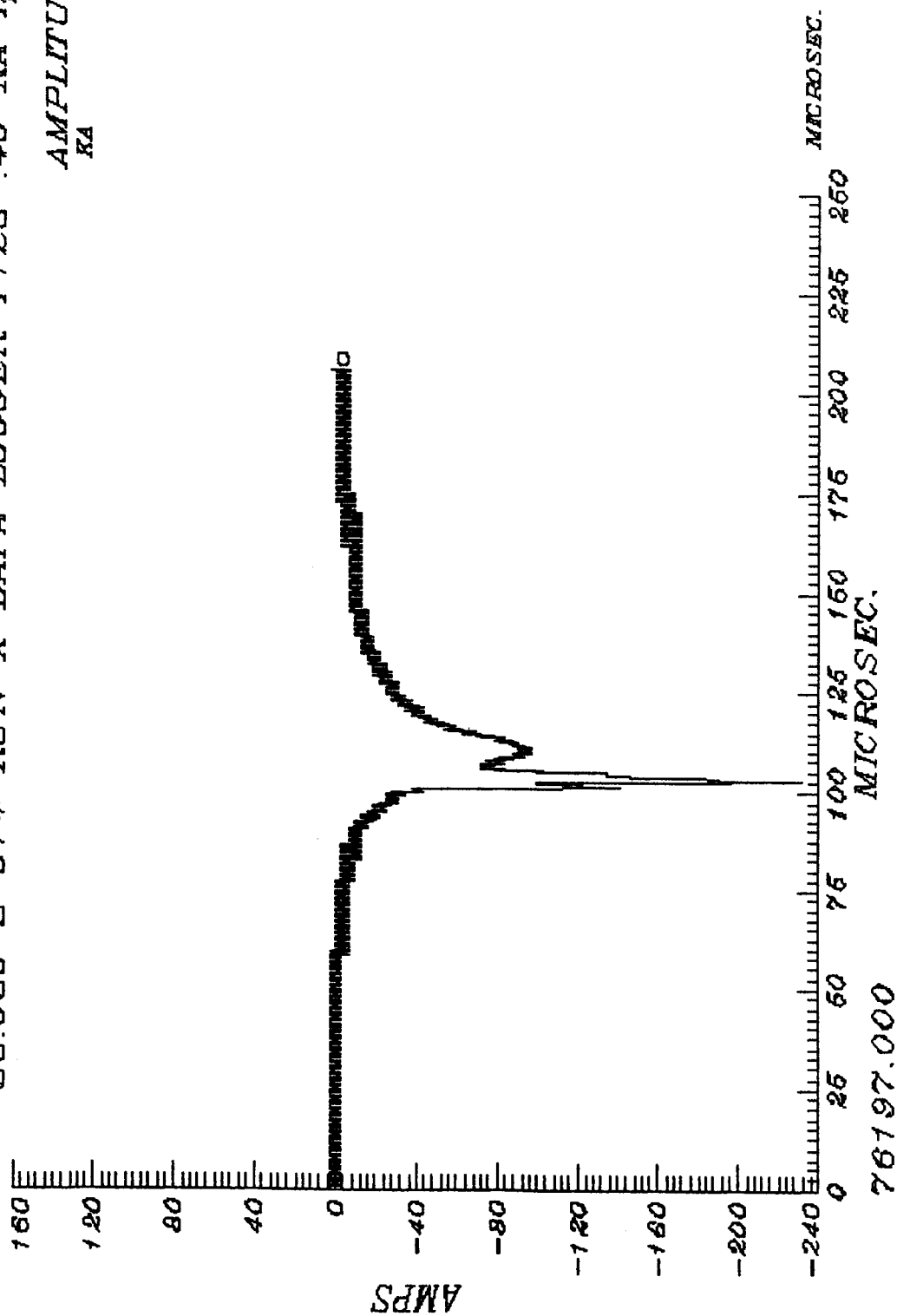
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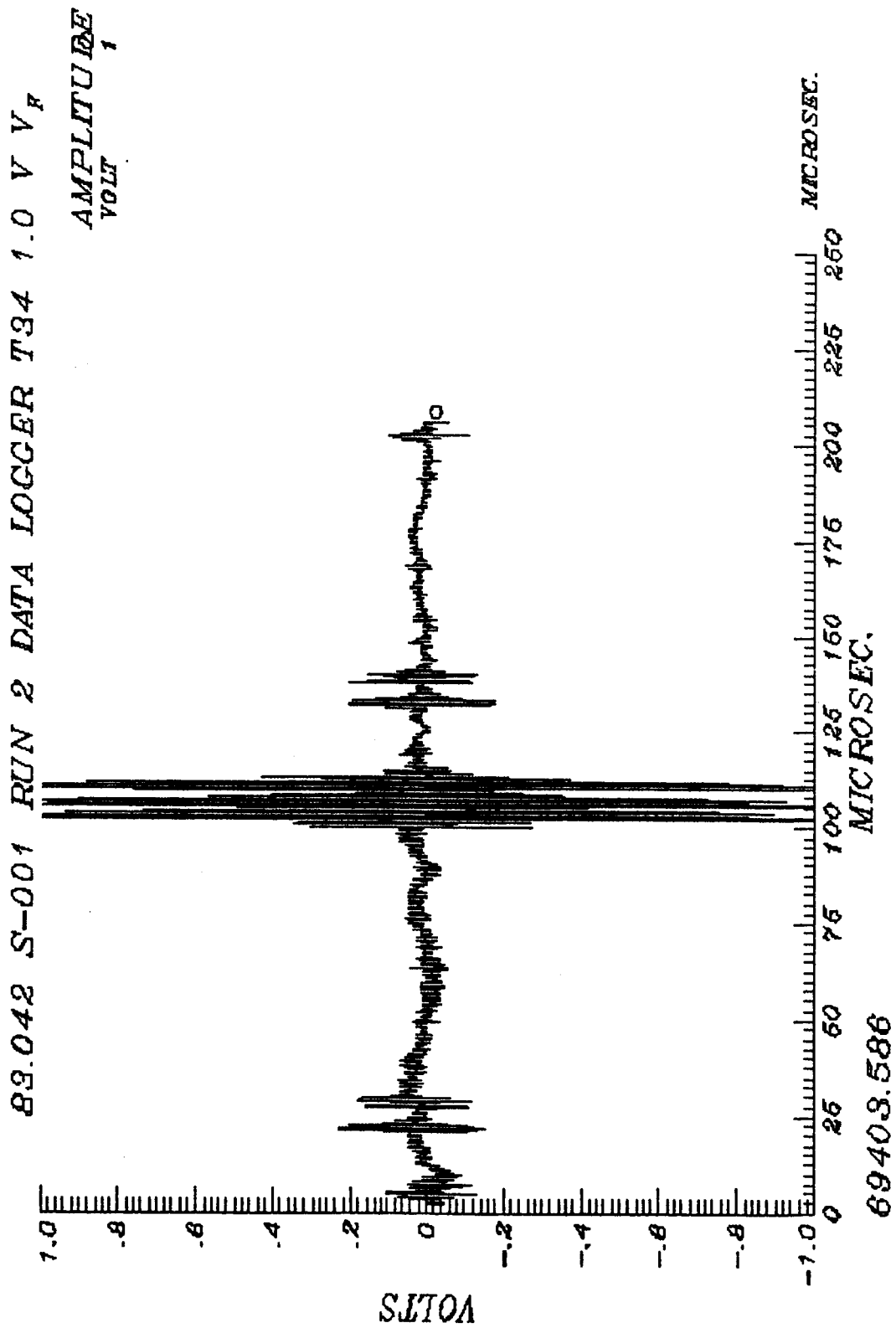
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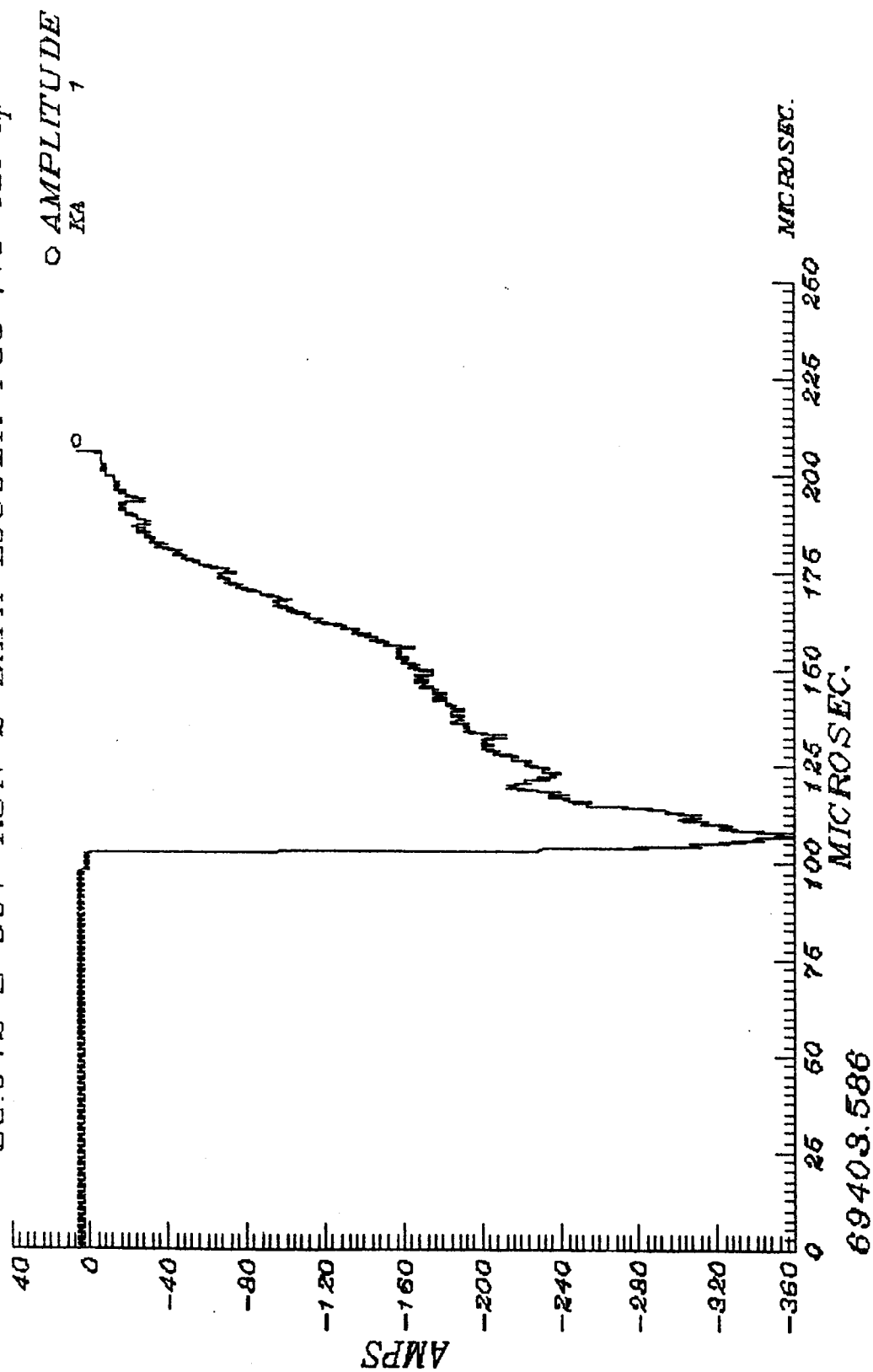
83.030 S-014 RUN X DATA LOGGER T123 .40 KA I_r

AMPLITUDE
KA
1





83.042 S-001 RUN 2 DATA LOGGER T35 .40 KA I_T



89.044 S-004 RUN X DATA LOGGER T36 1.0 V V_F

AMPLITUDE
VOLT

VOLTS

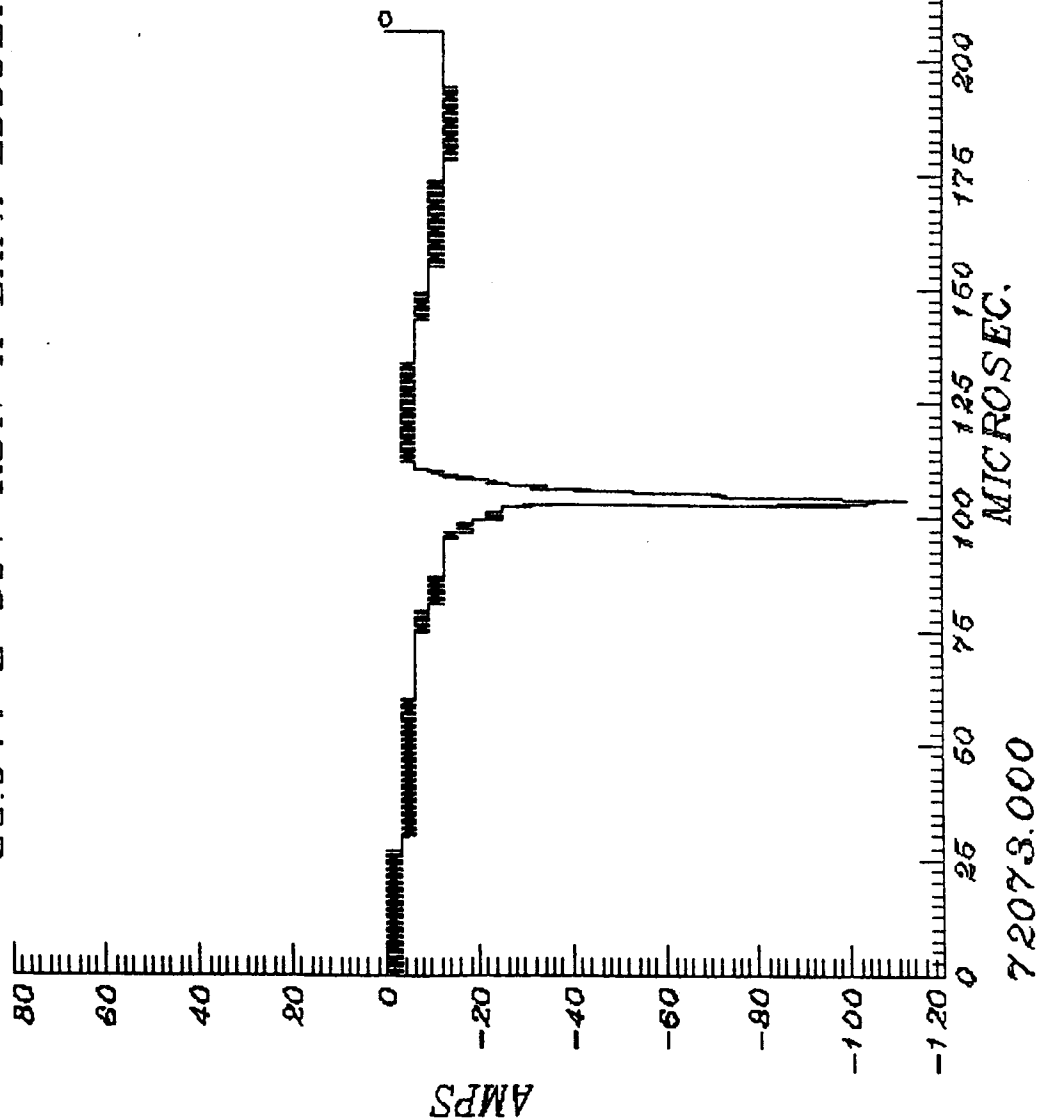
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1259

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MICROSEC.

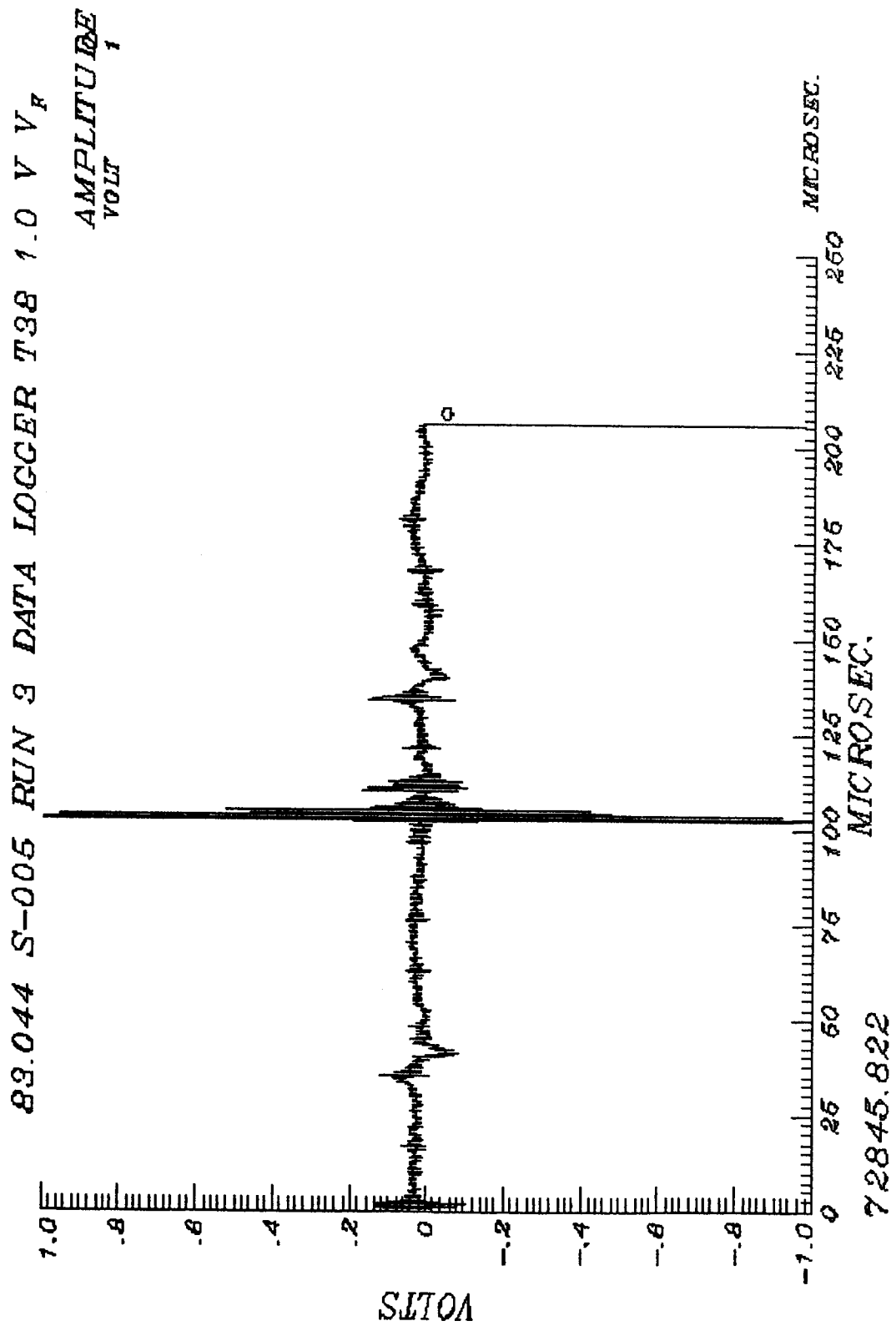
89.044 S-004 RUN X DATA LOGGER T37 .40 KA I_T

○ AMPLITUDE
KA 1



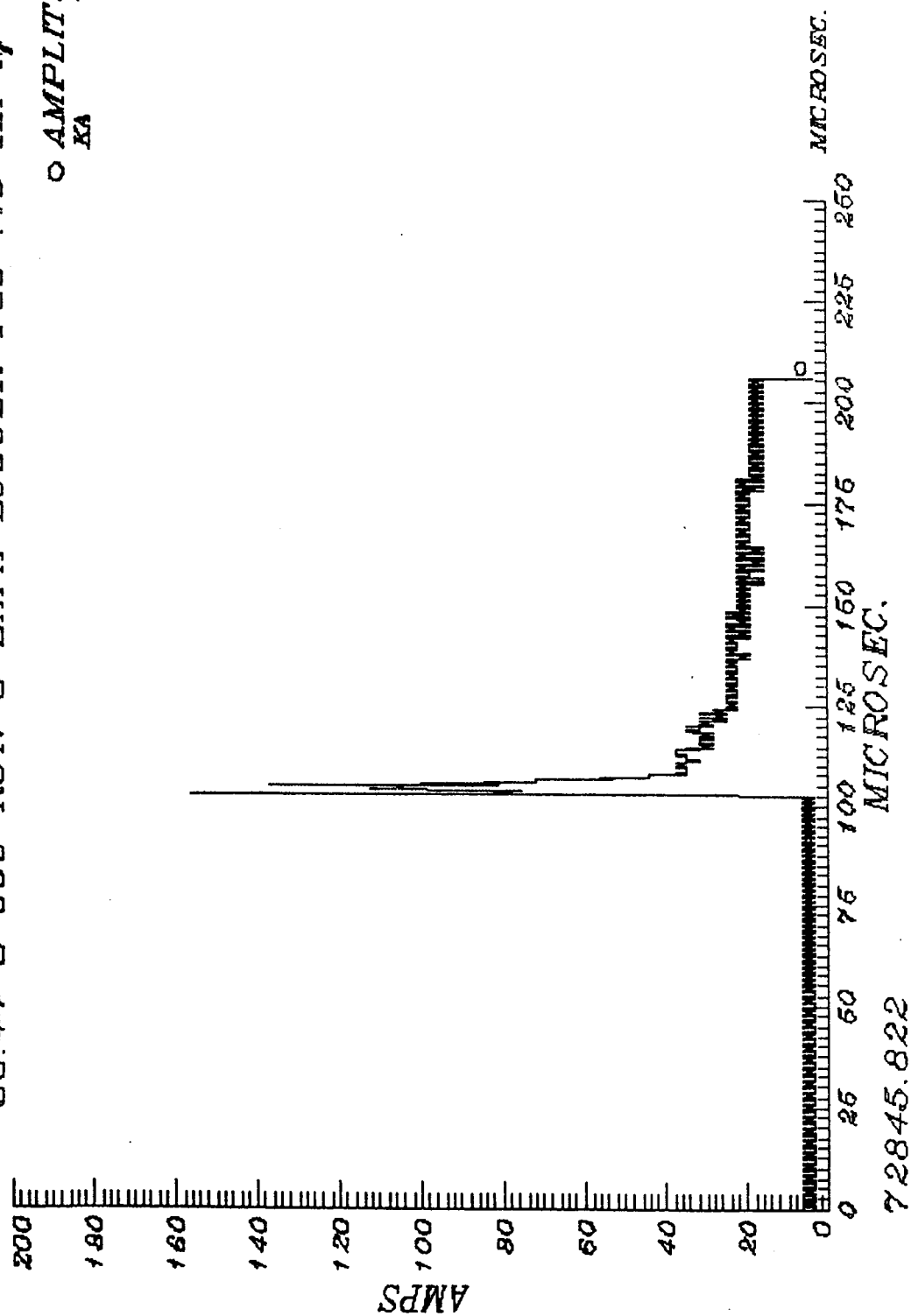
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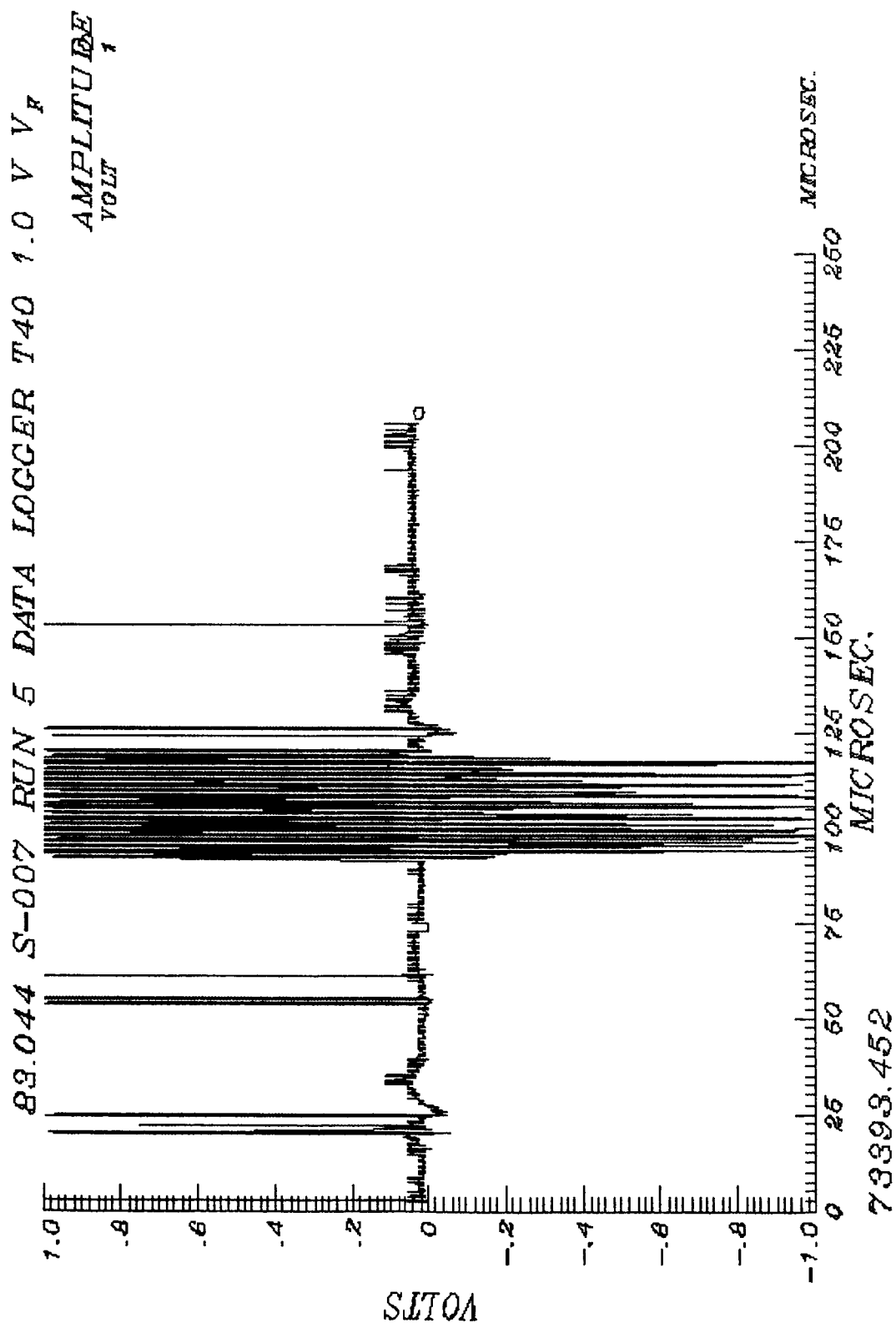
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83.44 S-005 RUN 3 DATA LOGGER T39 .40 KA I₇

○ AMPLITUDE
KA 1

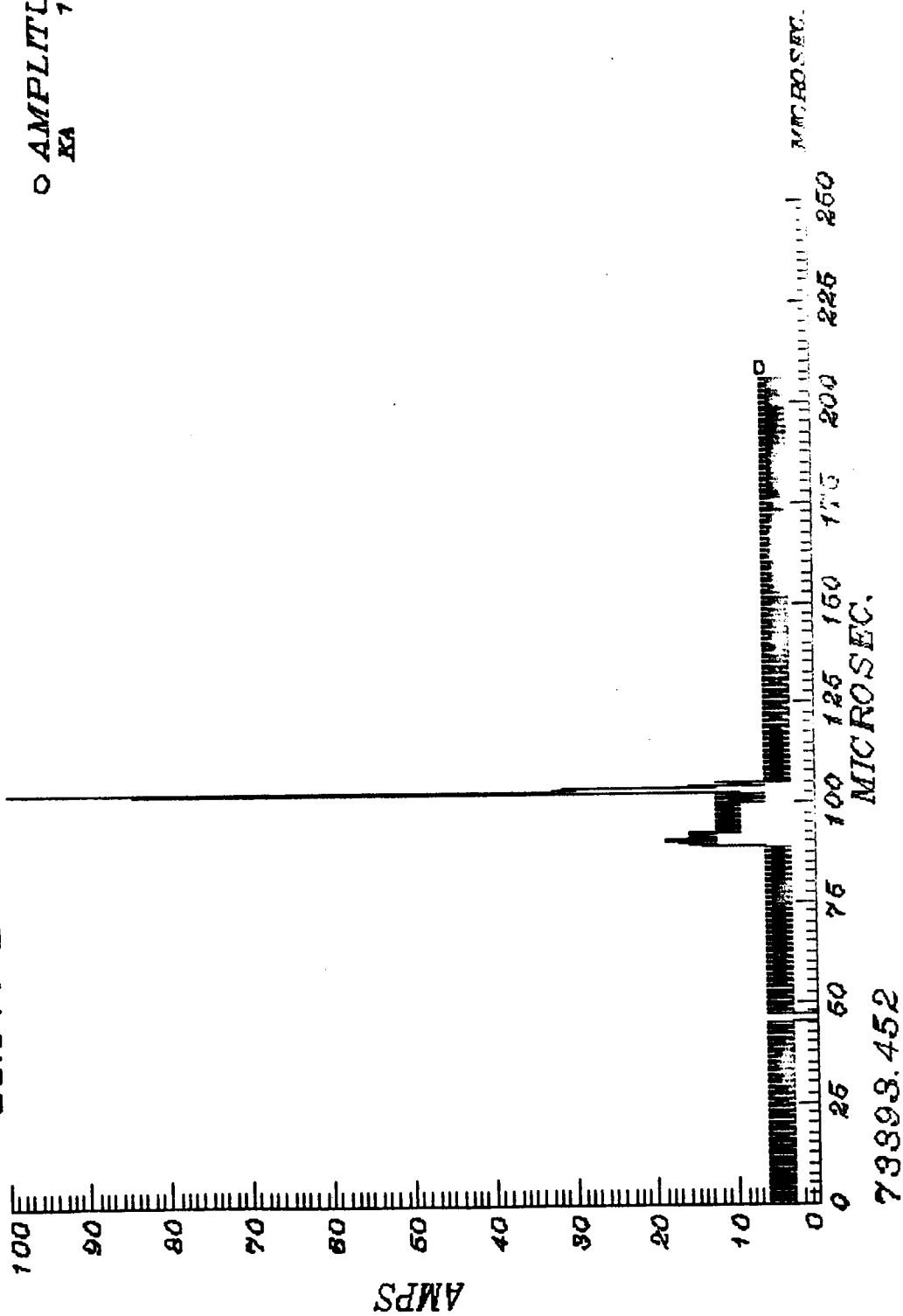


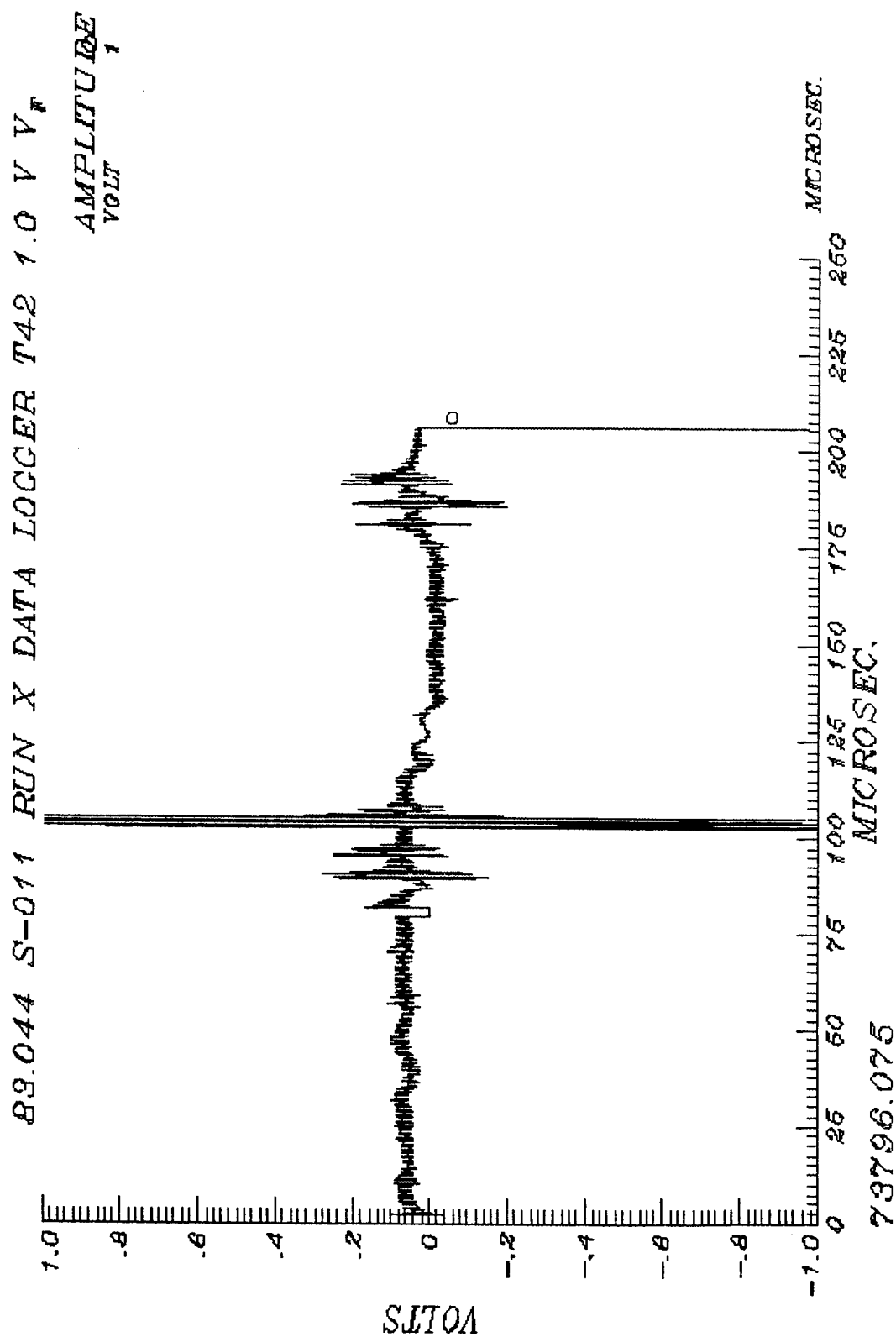


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83.044 S-007 RUN 5 DATA LOGGER T41 .40 KA I_T
○ AMPLITUDE
KA 1



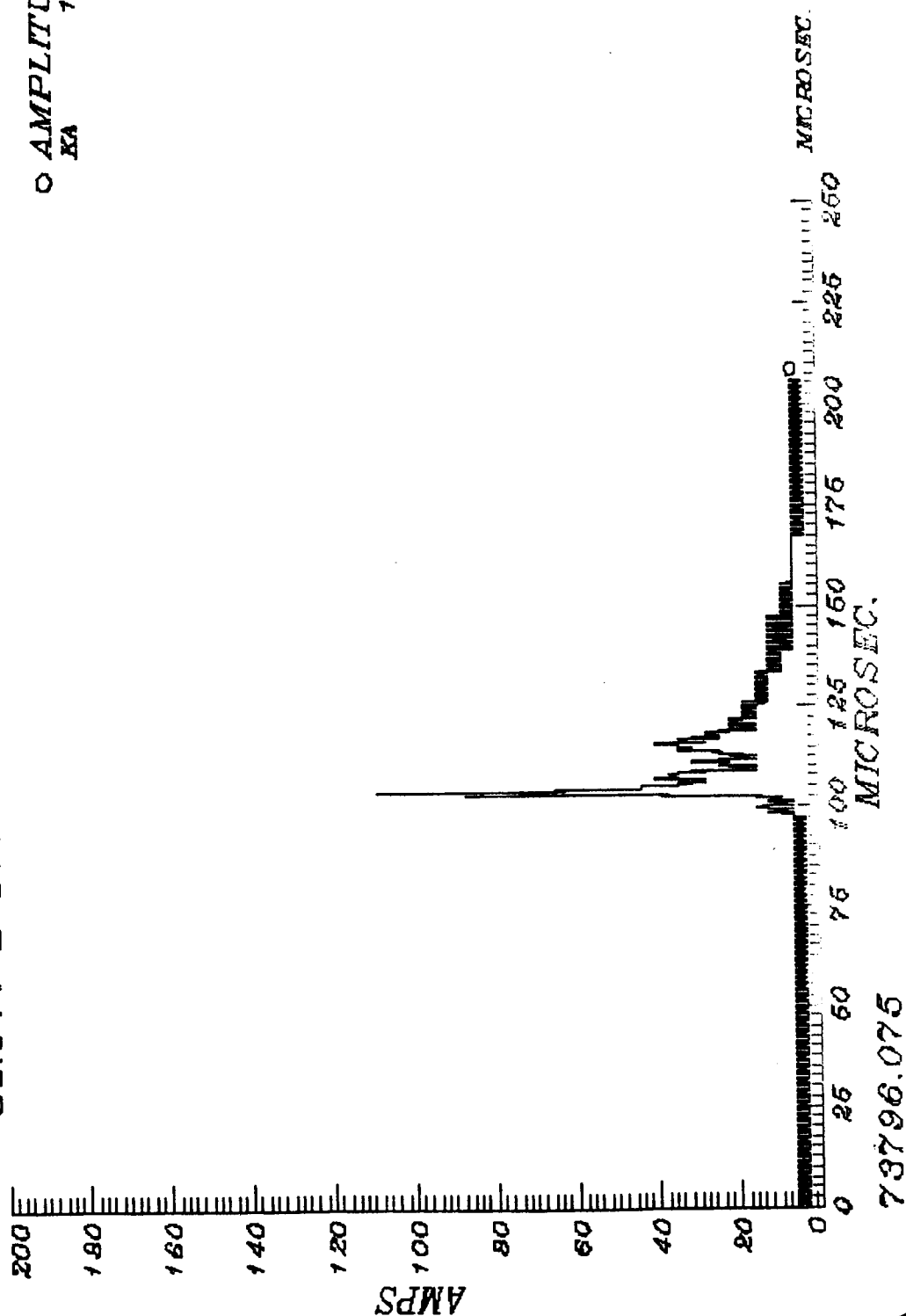


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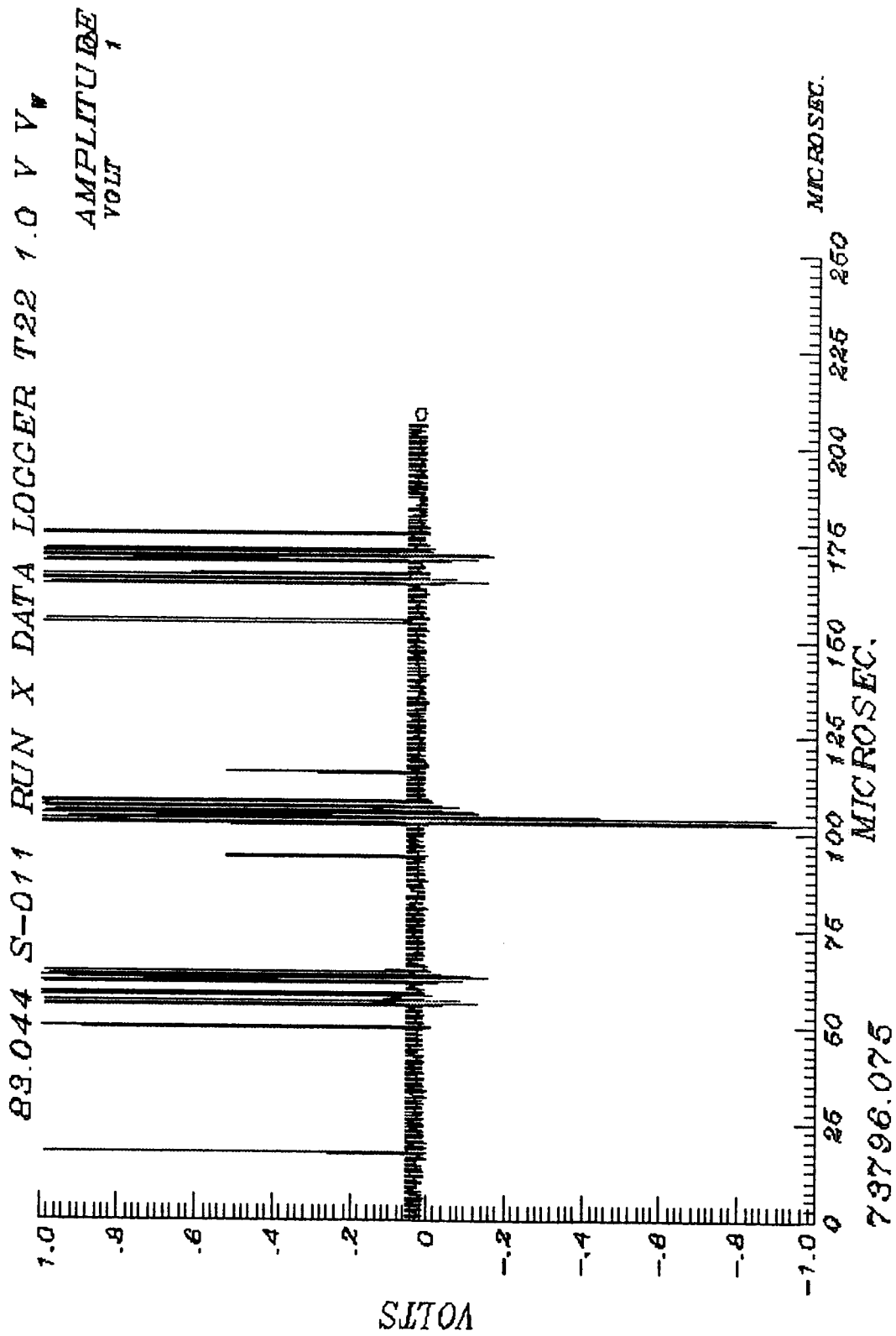
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83.044 S-011 RUN X DATA LOGGER T43 .40 KA I_T

○ AMPLITUDE
KA



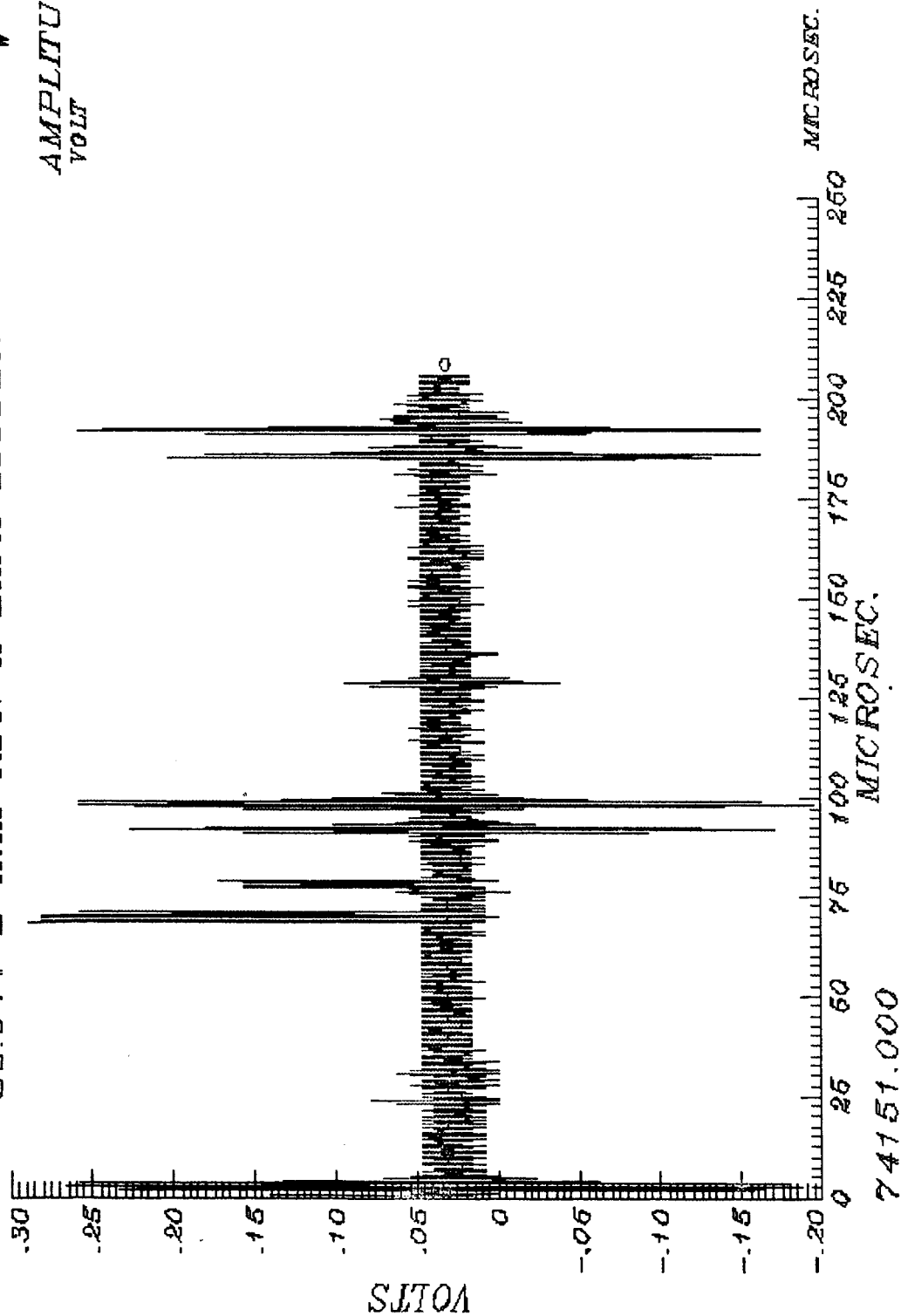
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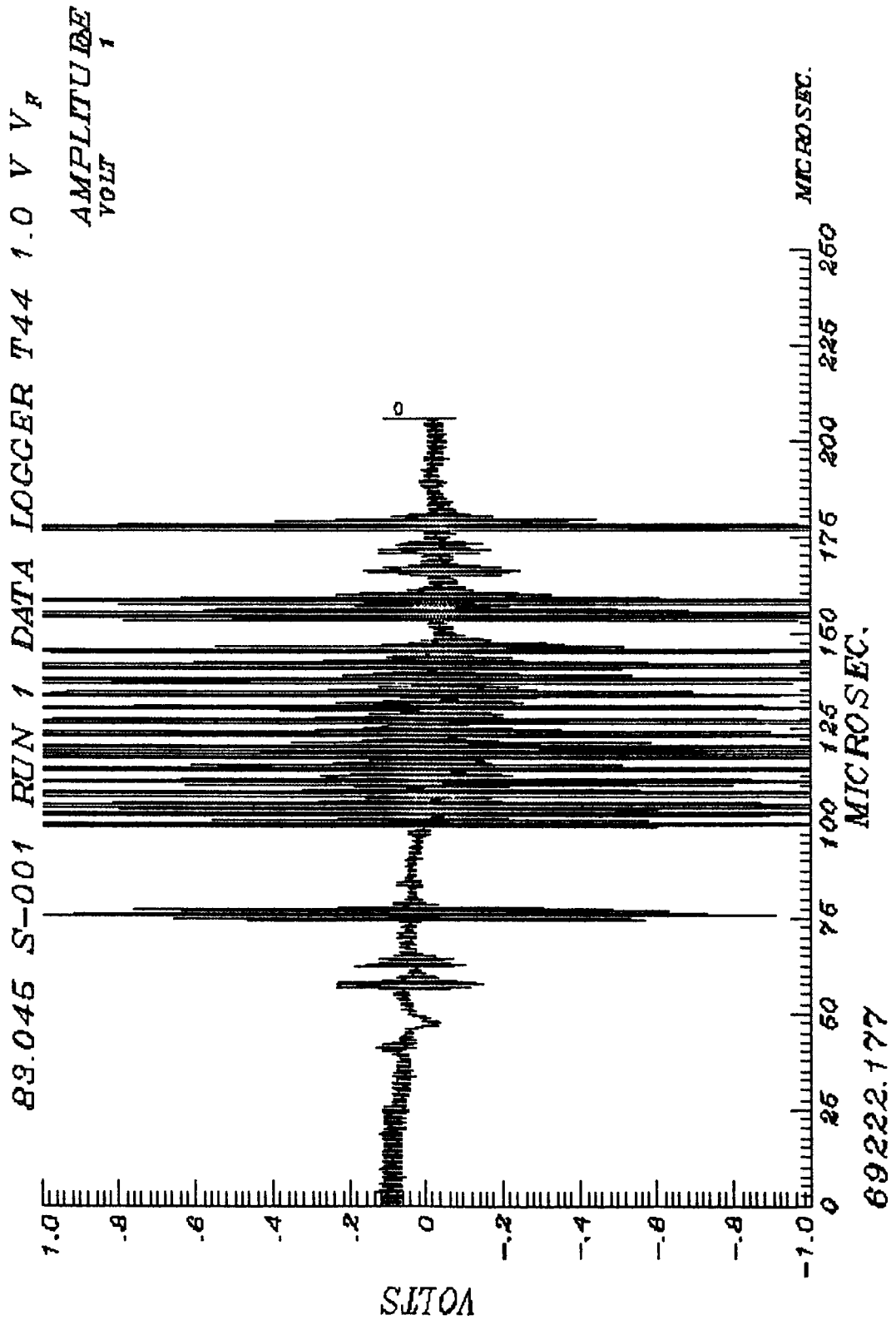
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83.044 S-XXX RUN X DATA LOGGER T23 1.0 V V_w

AMPLITUDE
VOLT 1

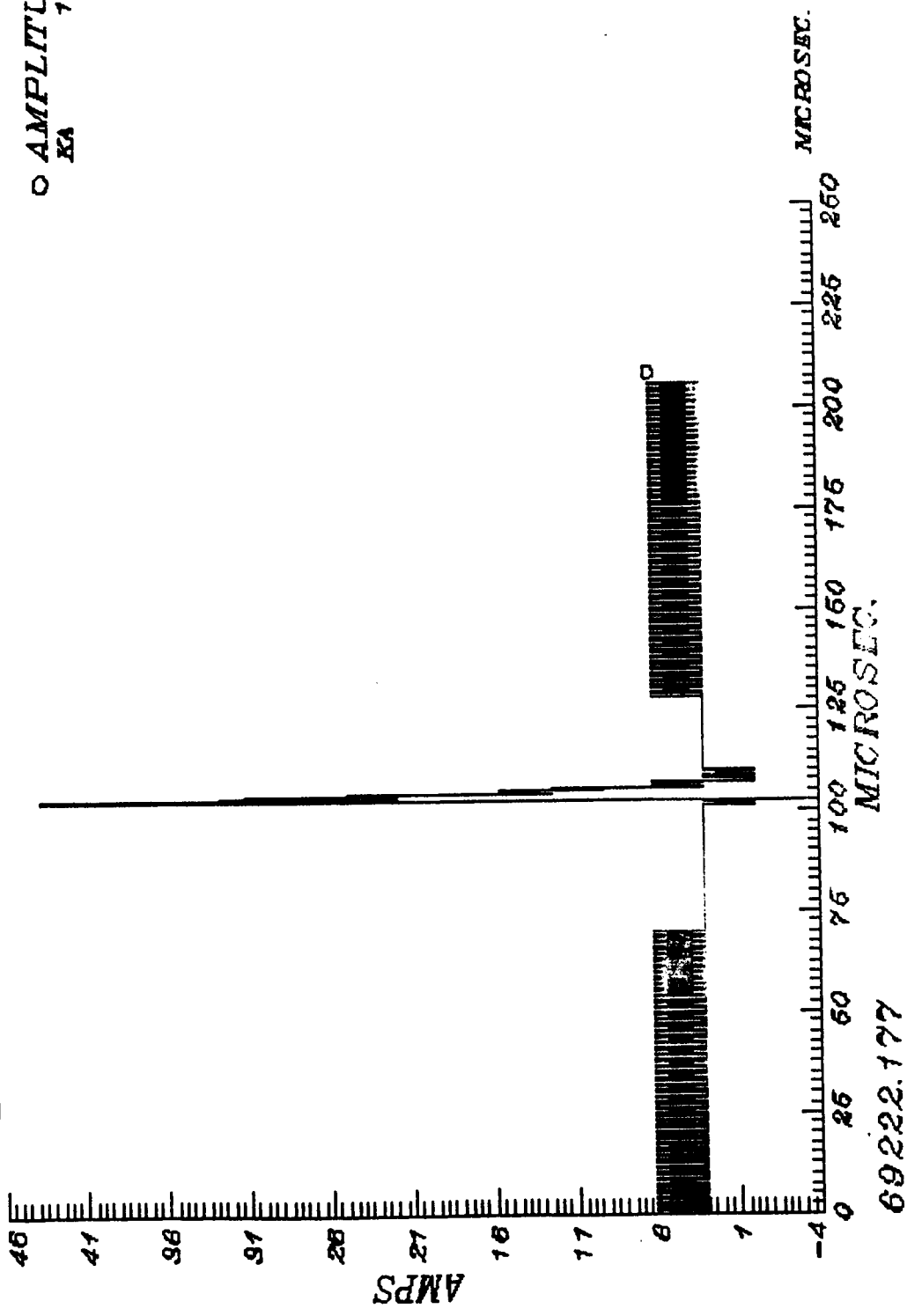


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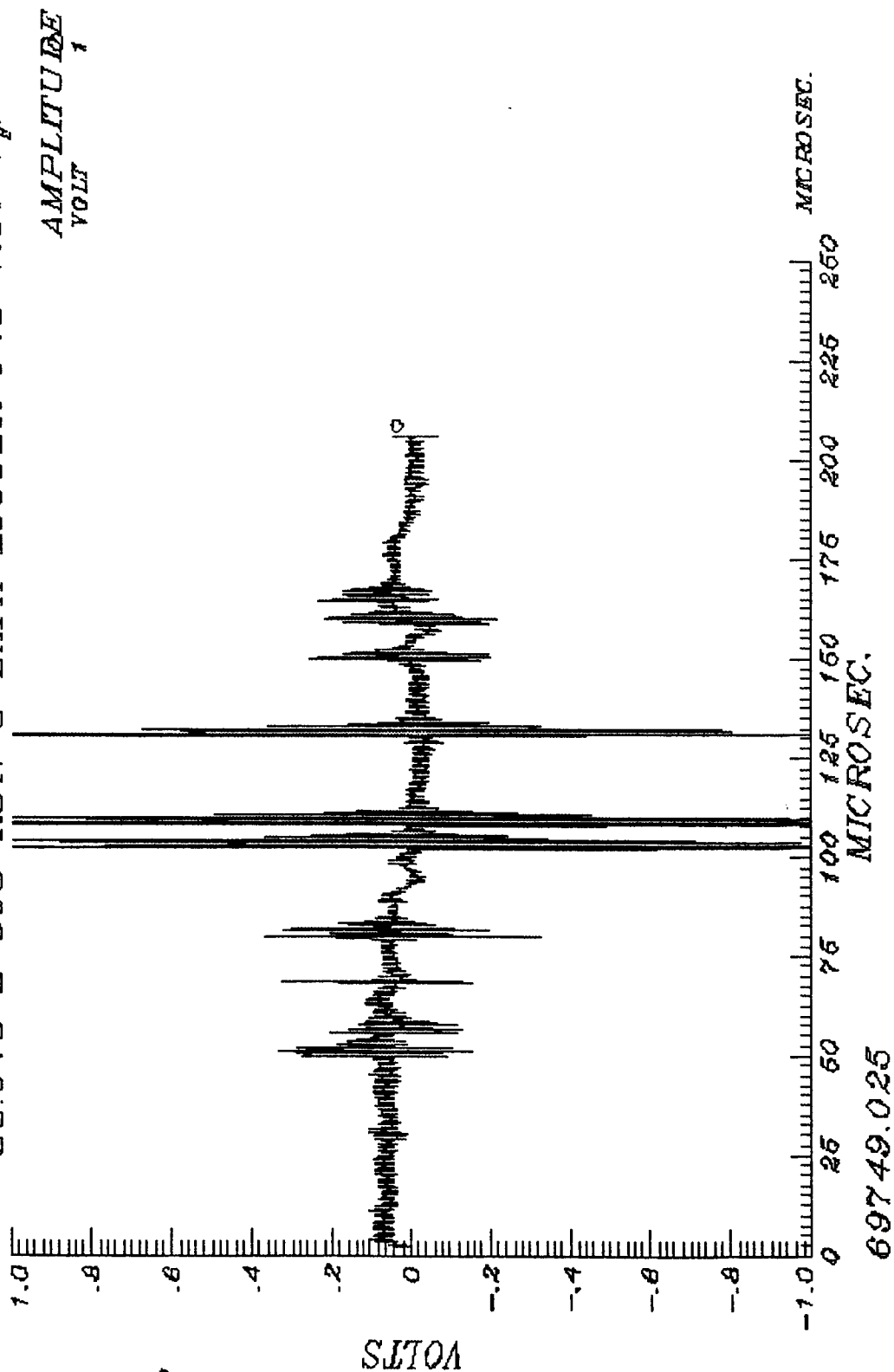
83.045 S-001 RUN 1 DATA LOGGER T45 .40 KA I_T

○ AMPLITUDE
KA



69222.177

83.045 S-003 RUN 3 DATA LOGGER T46 1.0V V_F

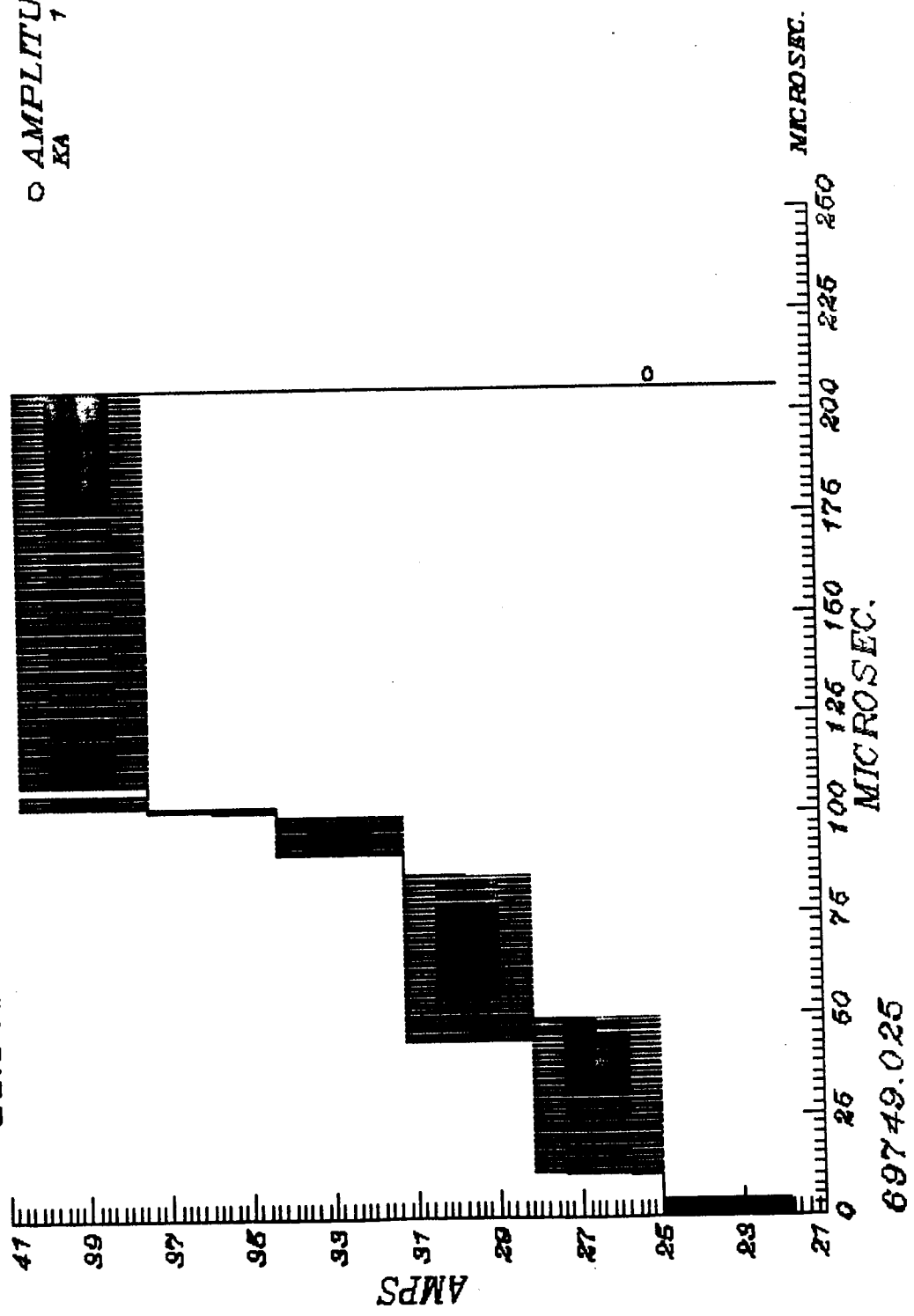


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89.045 S-003 RUN 3 DATA LOGGER T47 .40 KA I_T

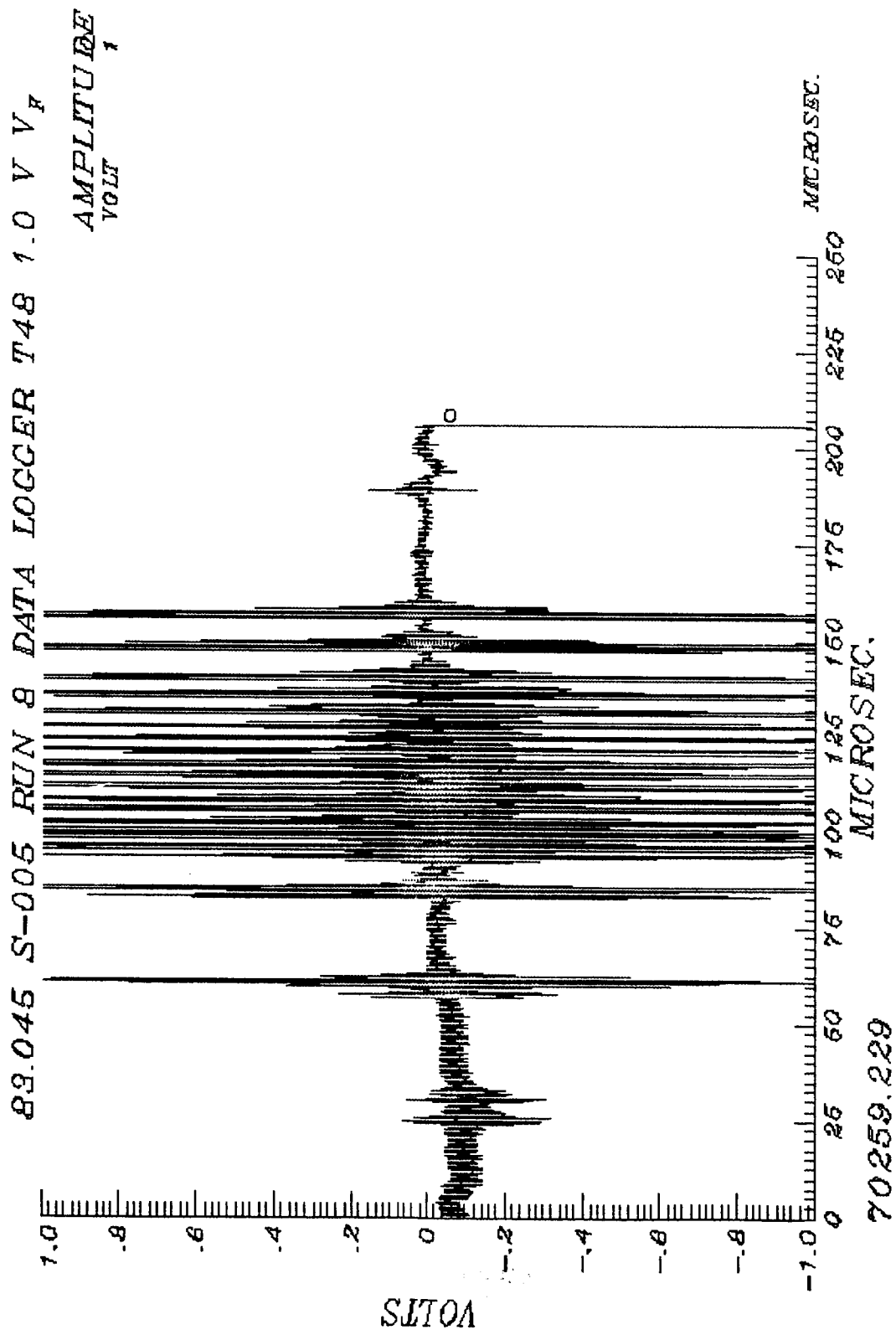
○ AMPLITUDE
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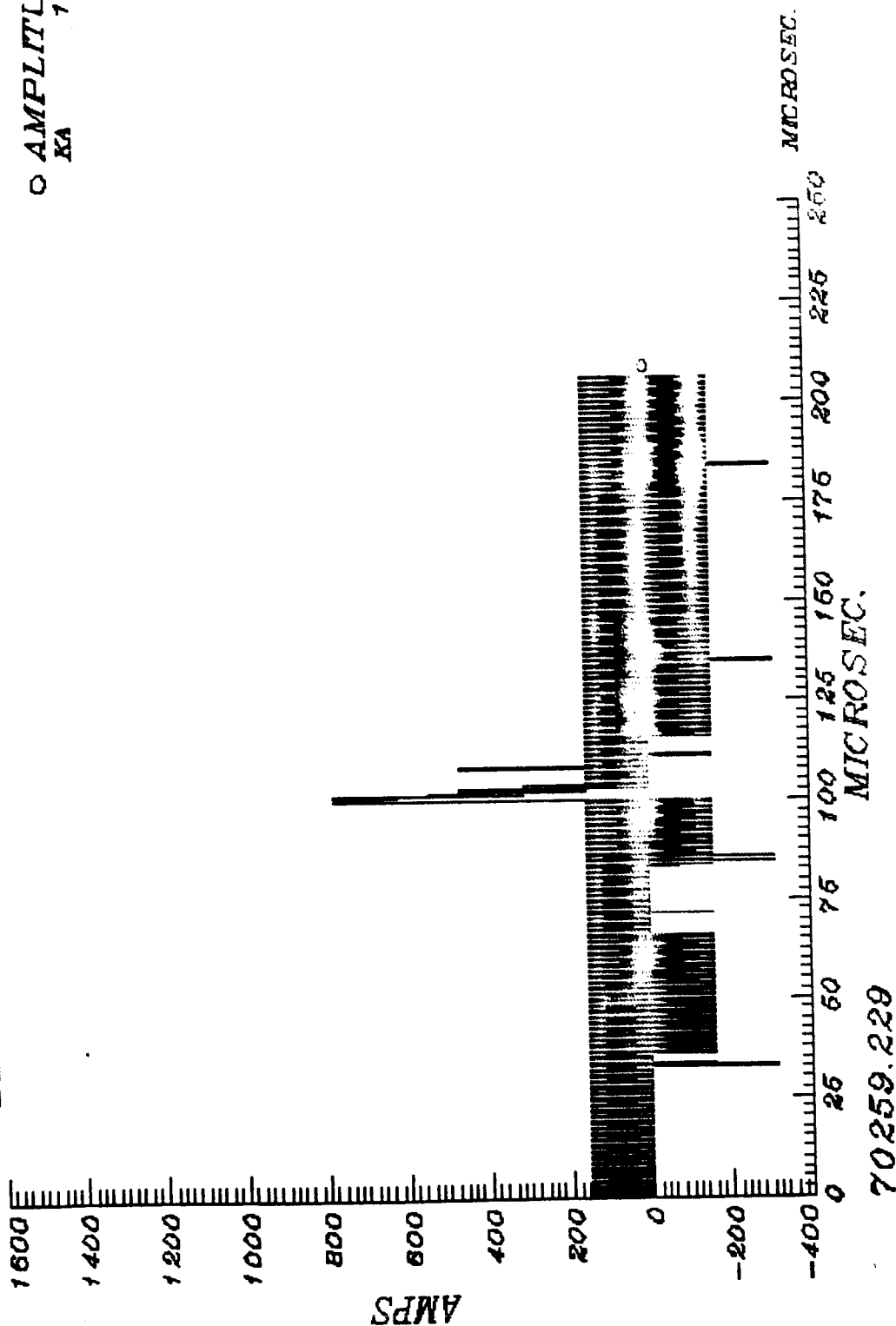


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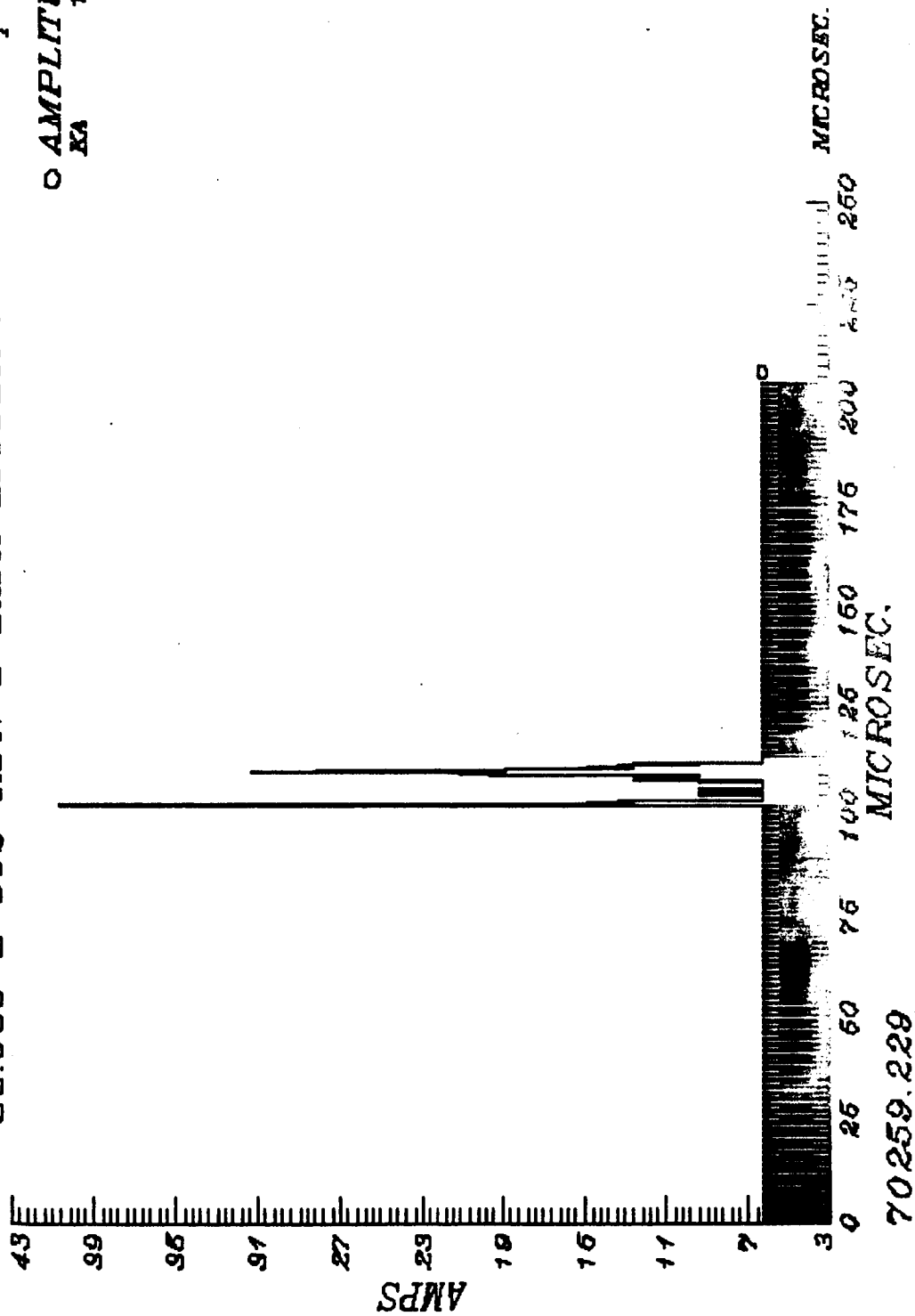
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89.045 S-005 RUN 8 DATA LOGGER T49 19.95 KA I_N
O AMPLITUDE
KA 1



88.060 S-005 RUN 8 DATA LOGGER T50 .40 KA I_T
 ○ AMPLITUDE
 KA



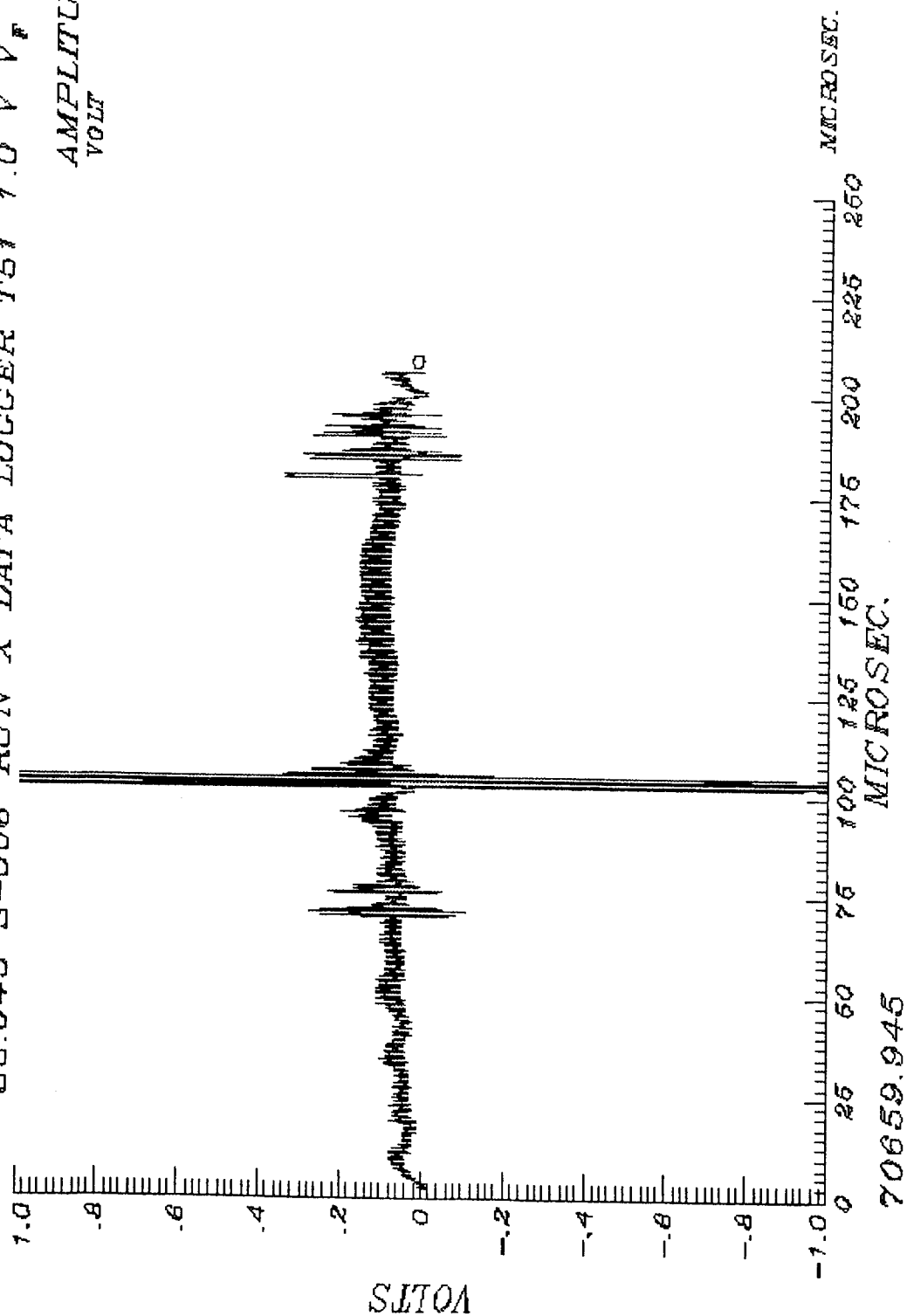
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89.045 S-006 RUN X DATA LOGGER T51 1.0 V V_F

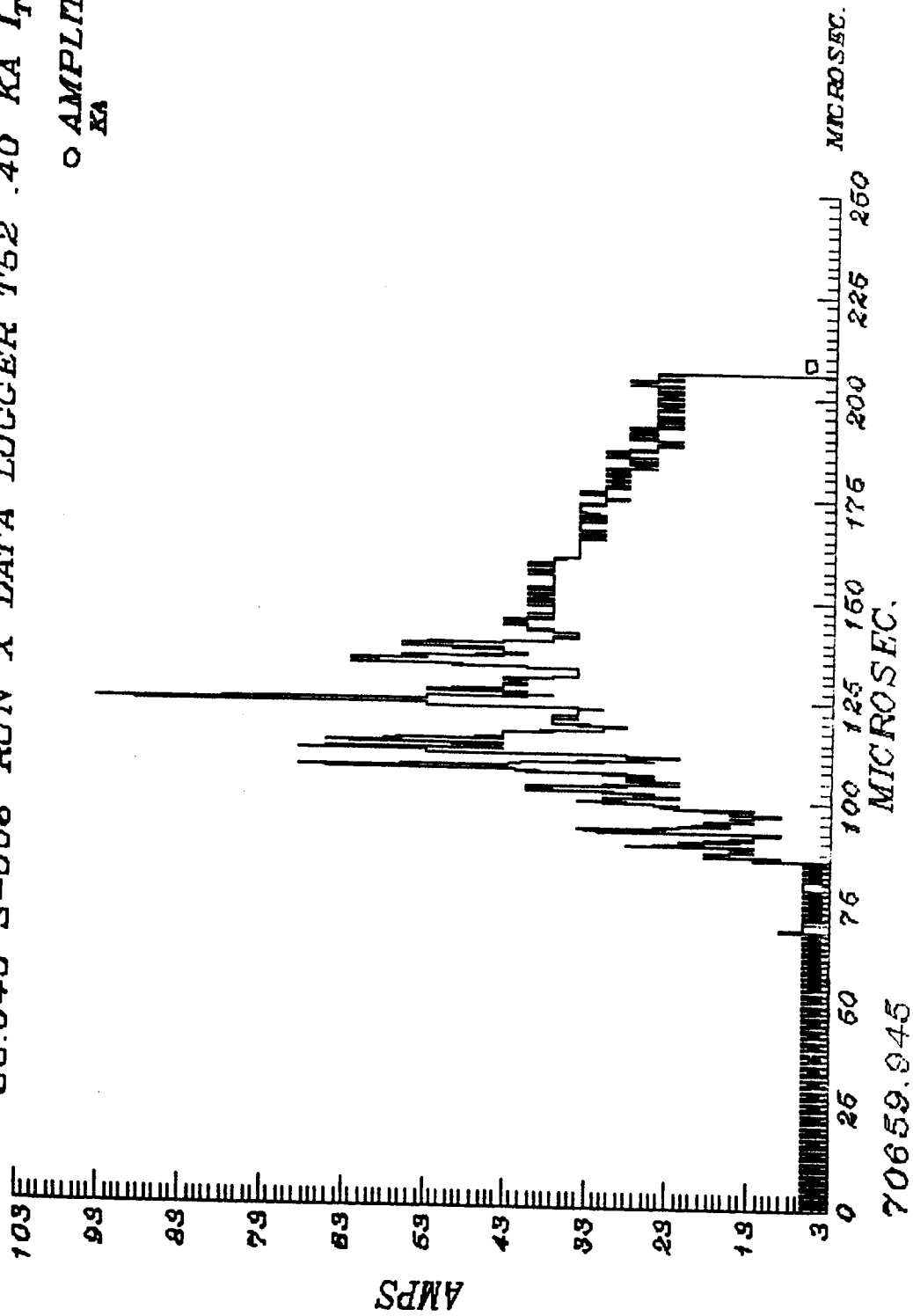
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VOLT \times



70659.945

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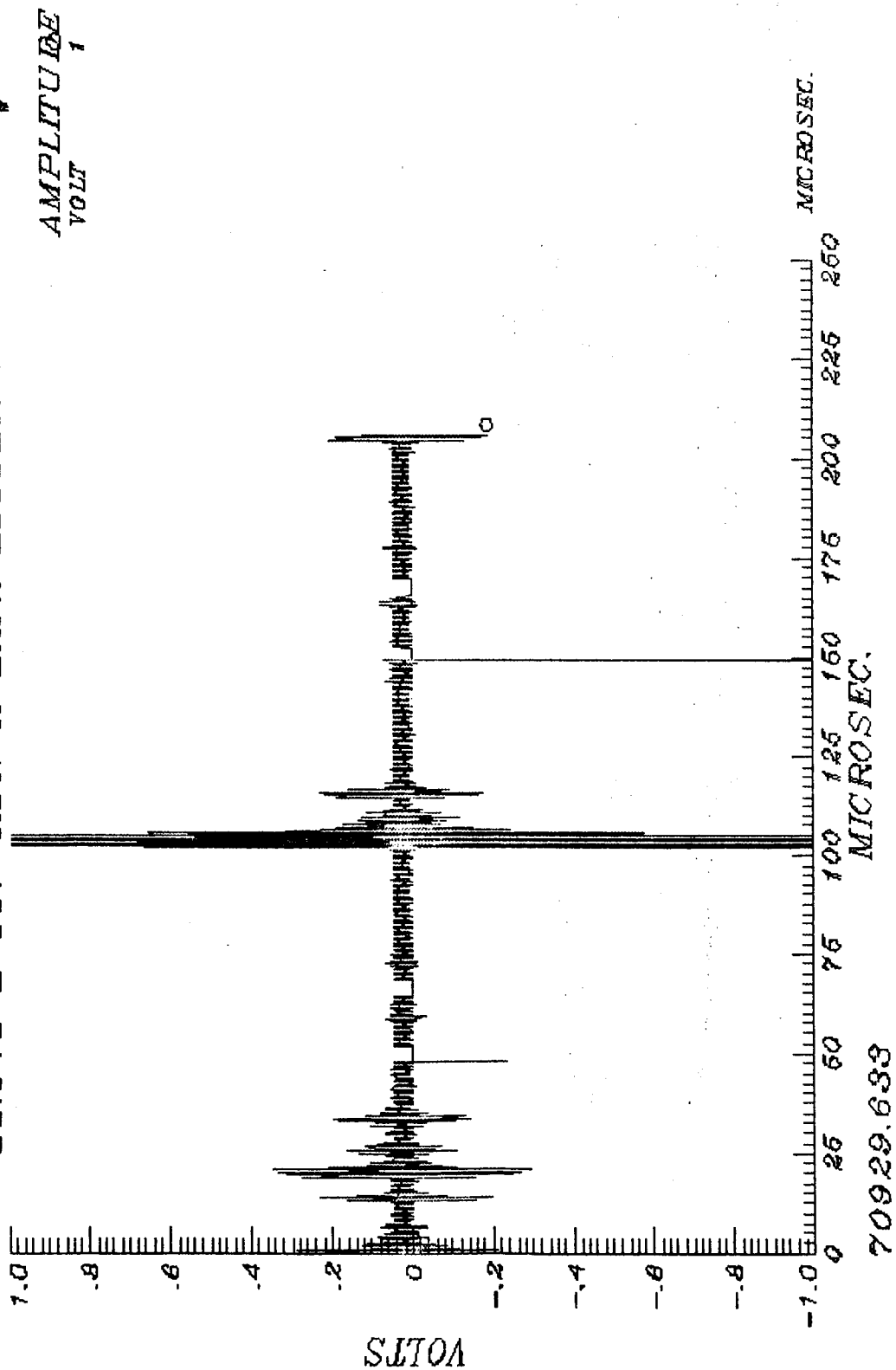
83.045 S-006 RUN X DATA LOGGER T52 .40 KA I_T
O AMPLITUDE
KA



1277

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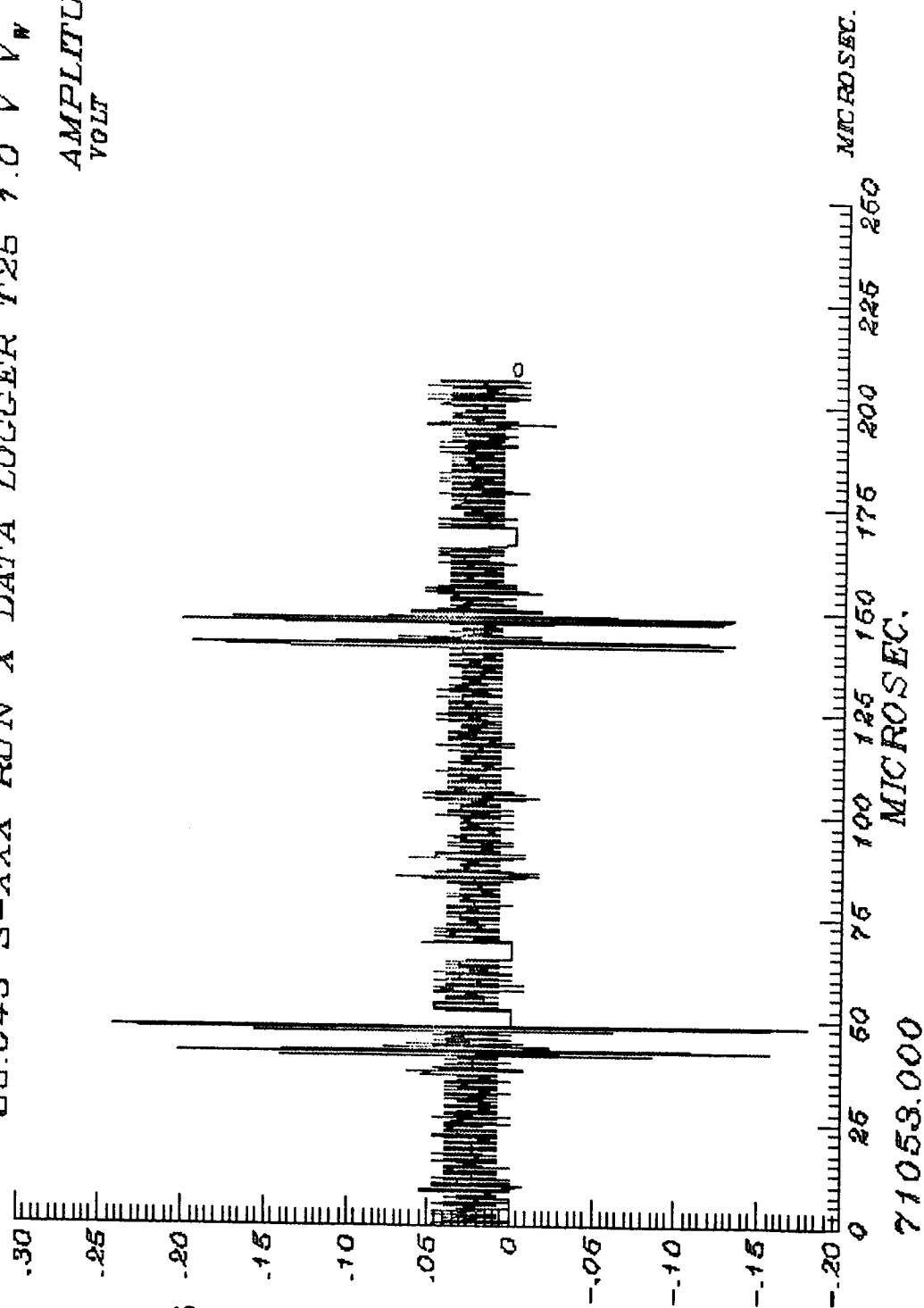
83.045 S-007 RUN X DATA LOGGER T24 1.0 V V_w



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83.045 S-XXX RUN X DATA LOGGER T25 1.0 V W

AMPLITUDE
VOLT



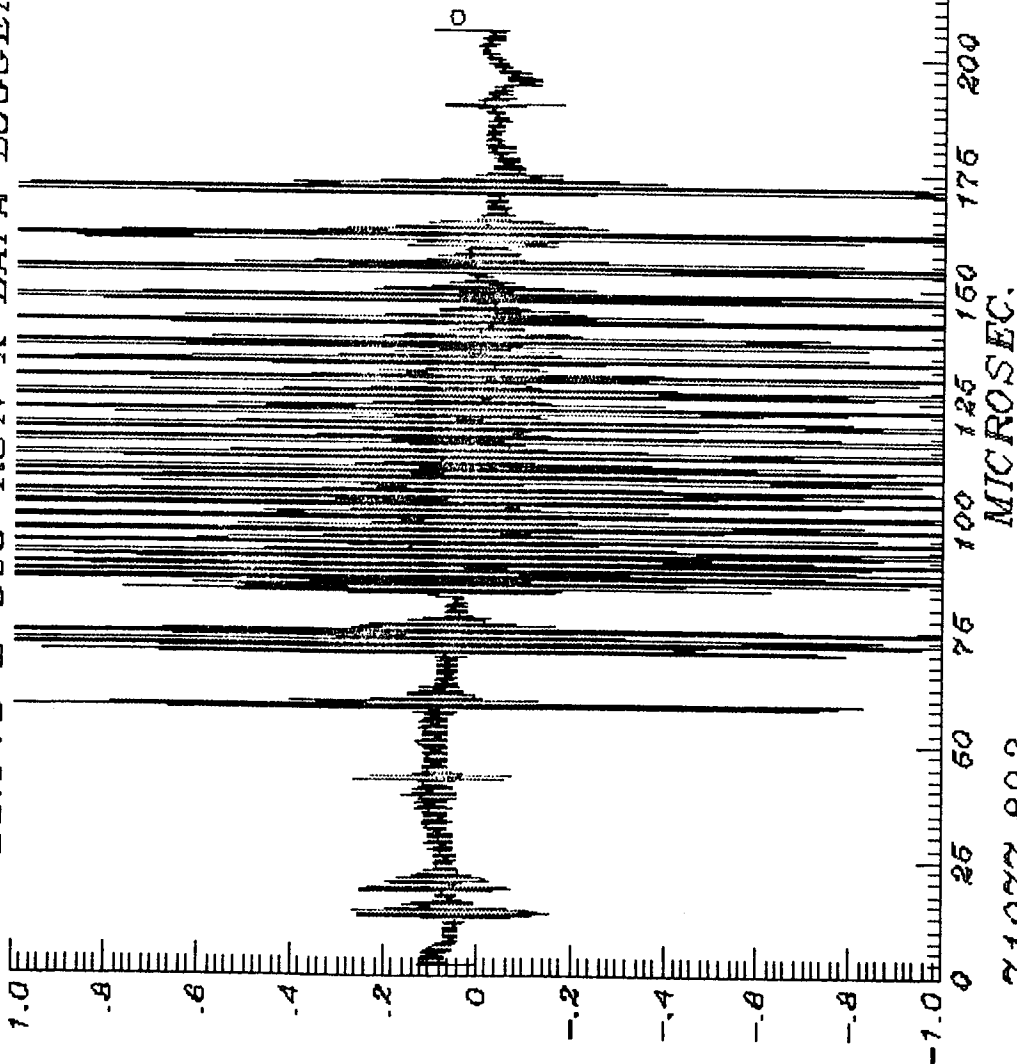
VOLTS

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83.045 S-009 RUN X DATA LOGGER T53 1.0 V V_F

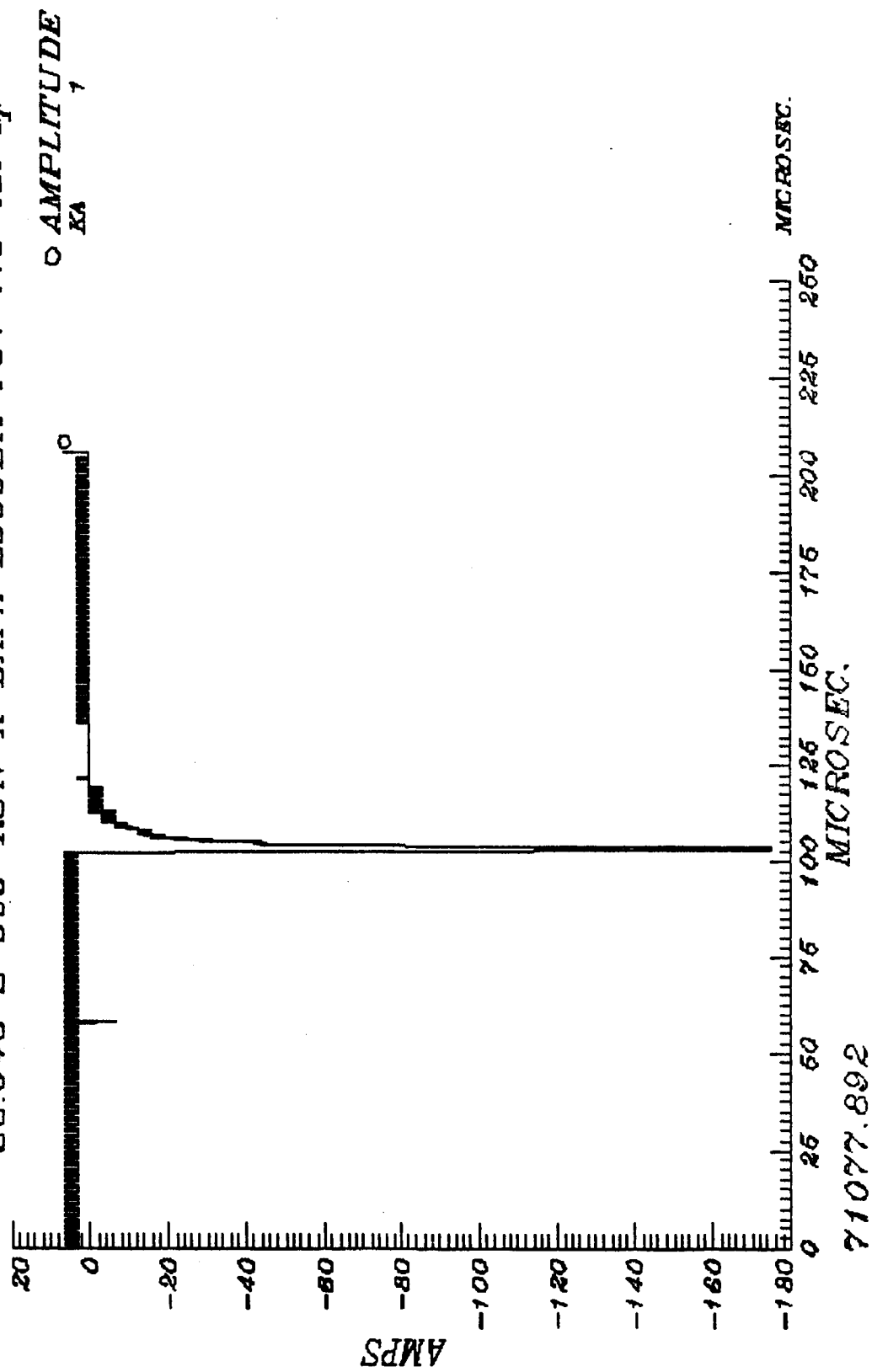
AMPLITUDE
VOLT



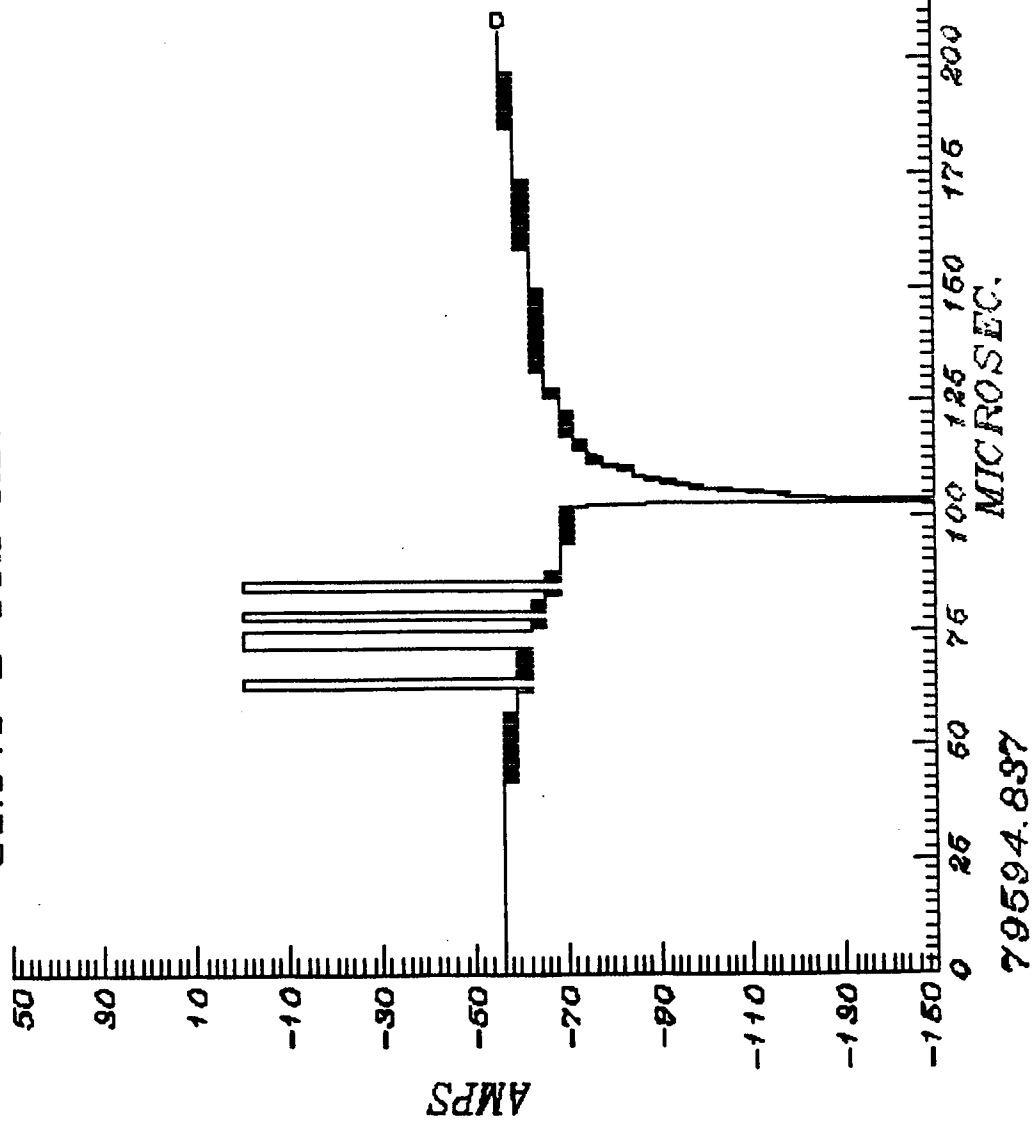
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83.045 S-009 RUN X DATA LOGGER T54 .40 KA I_T



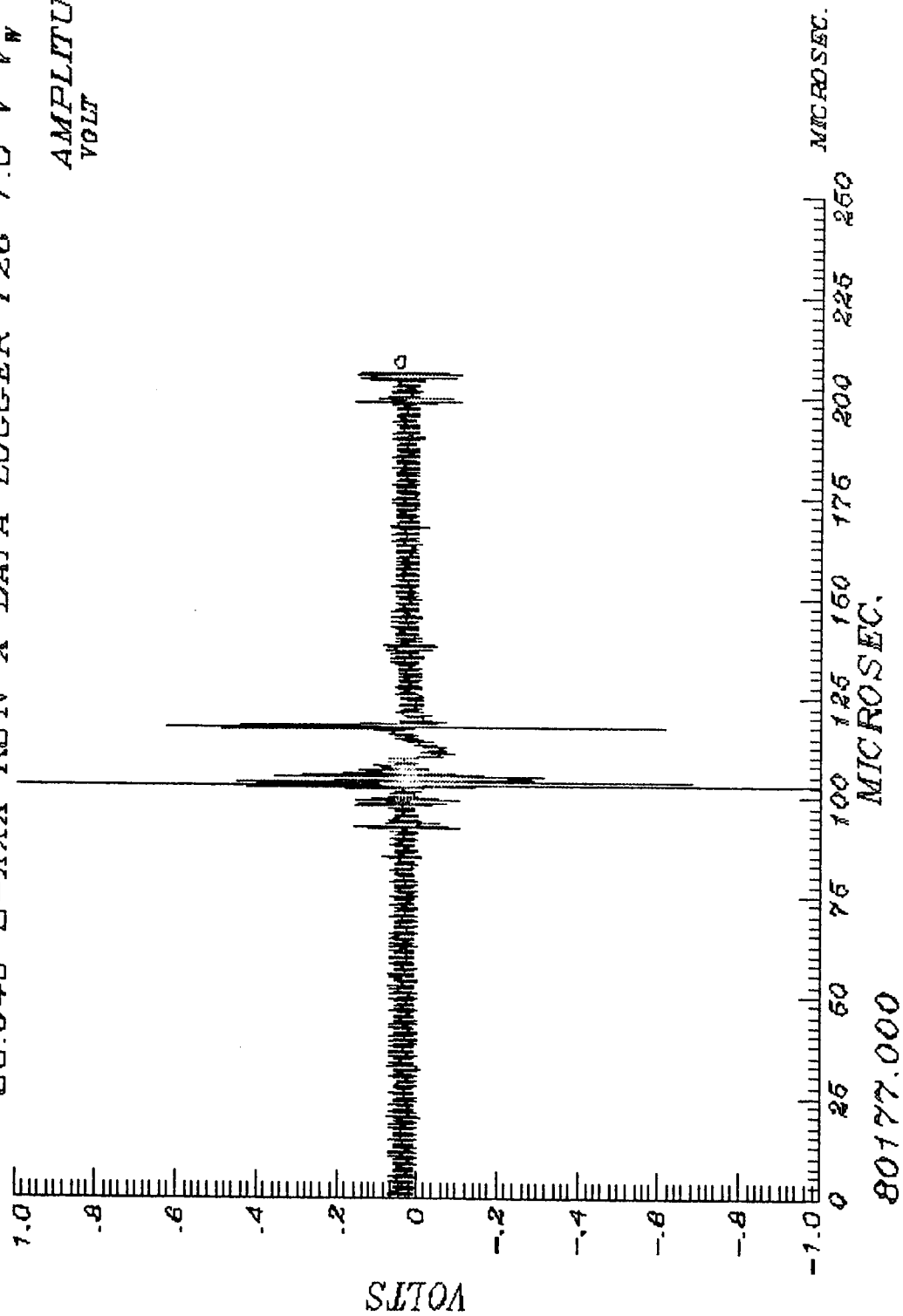
83.046 S-002 RUN X DATA LOGGER T55 .40 KA I_T
 O AMPLITUDE
 KA 1



79594.837

83.046 S-XXX RUN X DATA LOGGER T26 1.0 V V_W

AMPLITUDE
VOLT
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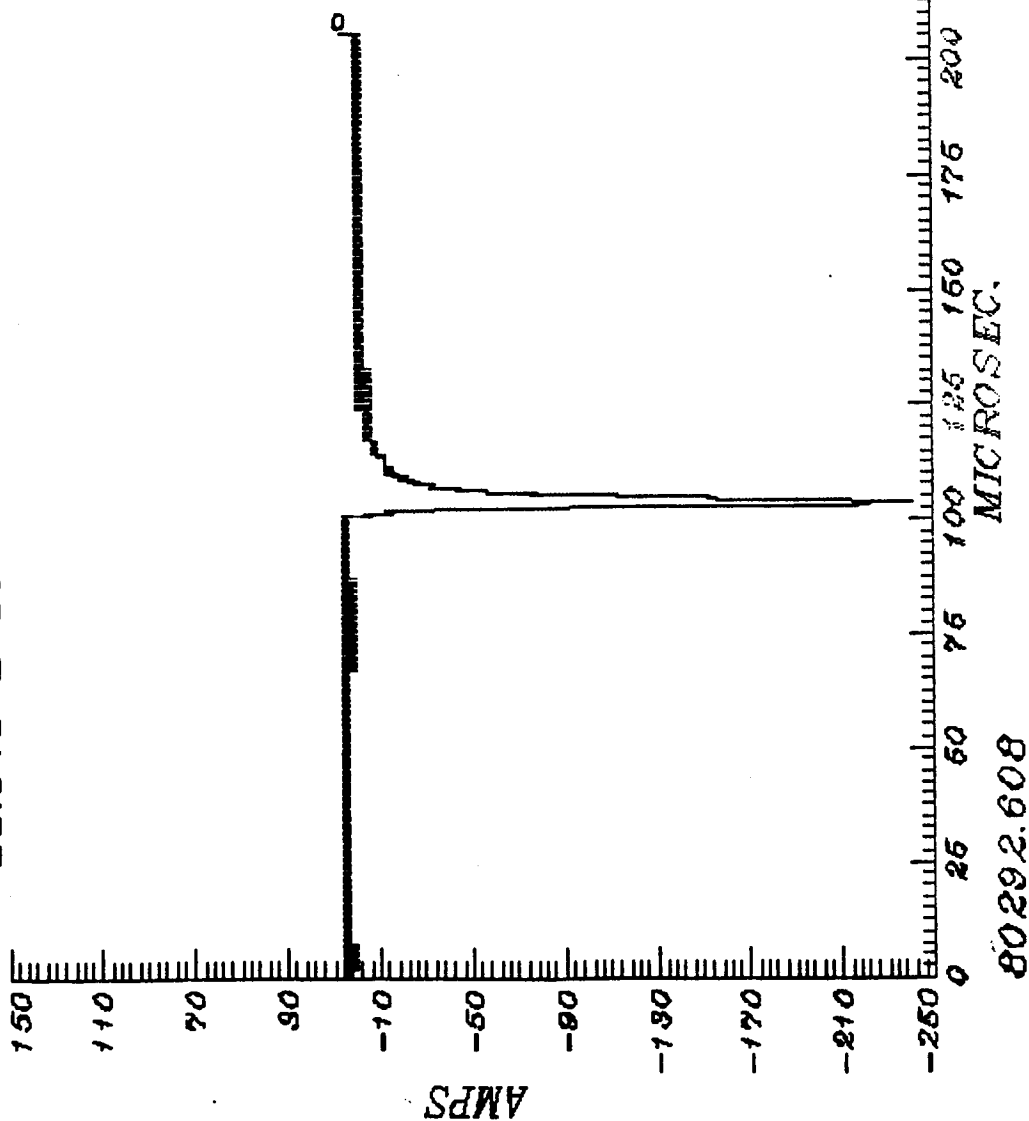


VOLT

MICROSEC.

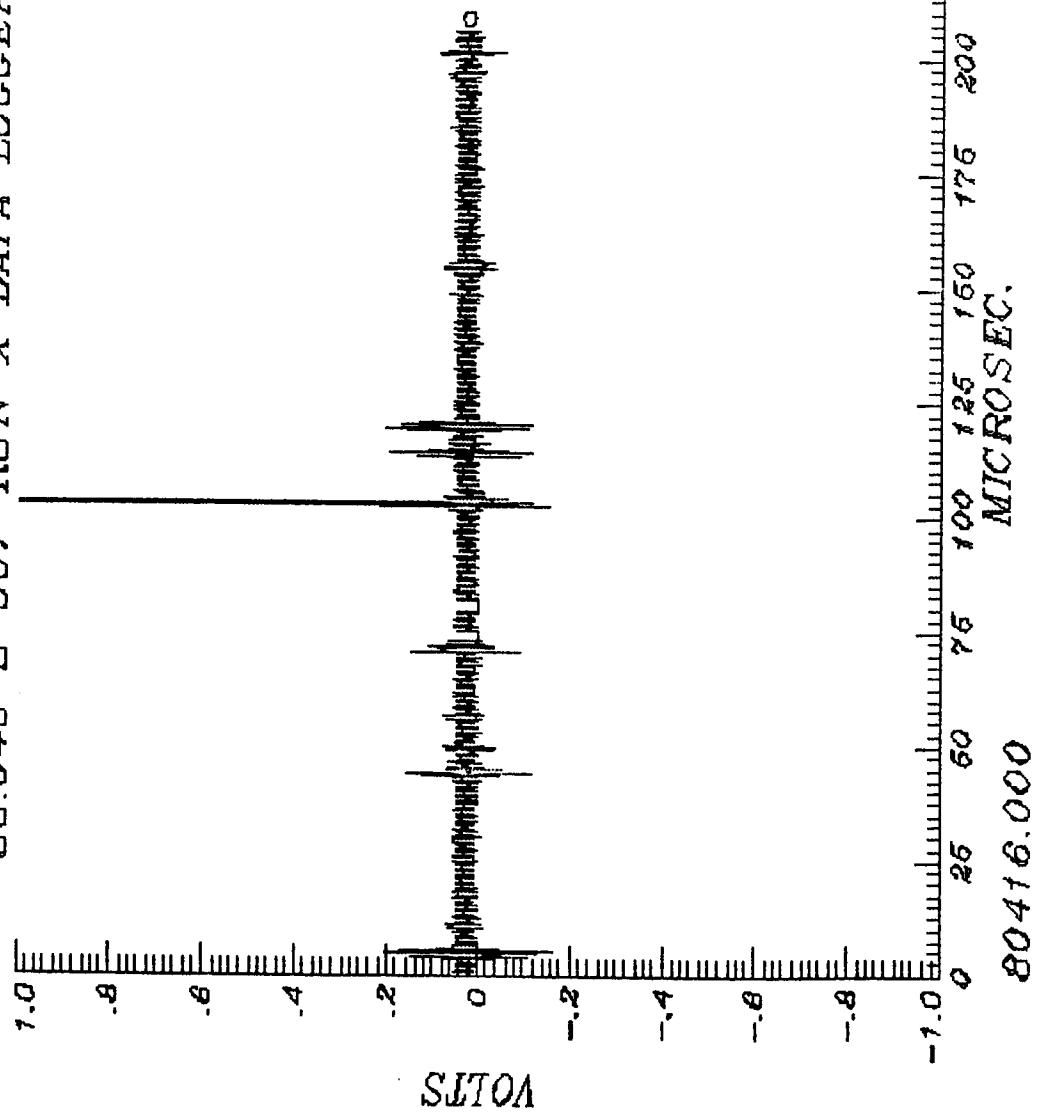
83.046 S-006 RUN 4 DATA LOGGER T56 .40 KA I_T

○ AMPLITUDE
KA



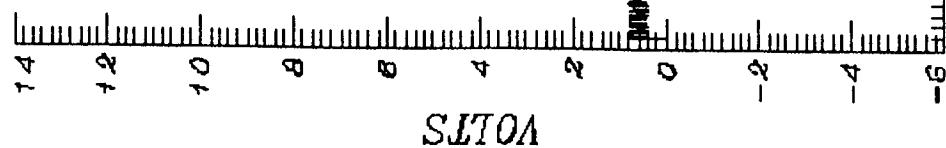
89.046 S-007 RUN X DATA LOGGER T27 1.0 V V_w

AMPLITUDE
VOLT
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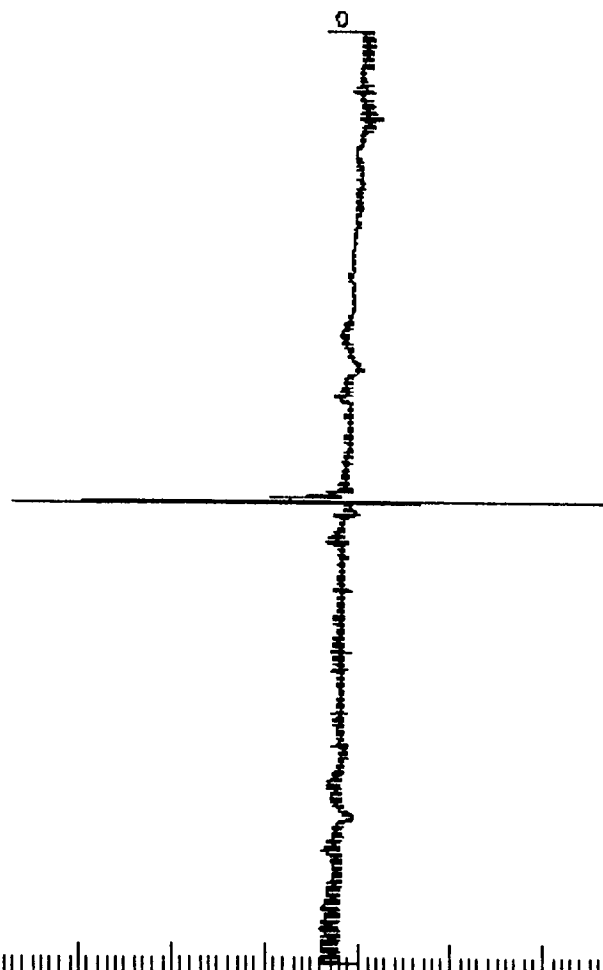


89.048 S-002 RUN 2 DATA LOGGER T57 7.5 V V_F

AMPLITUDE
VOLTS



VOLTS



MICROSEC.

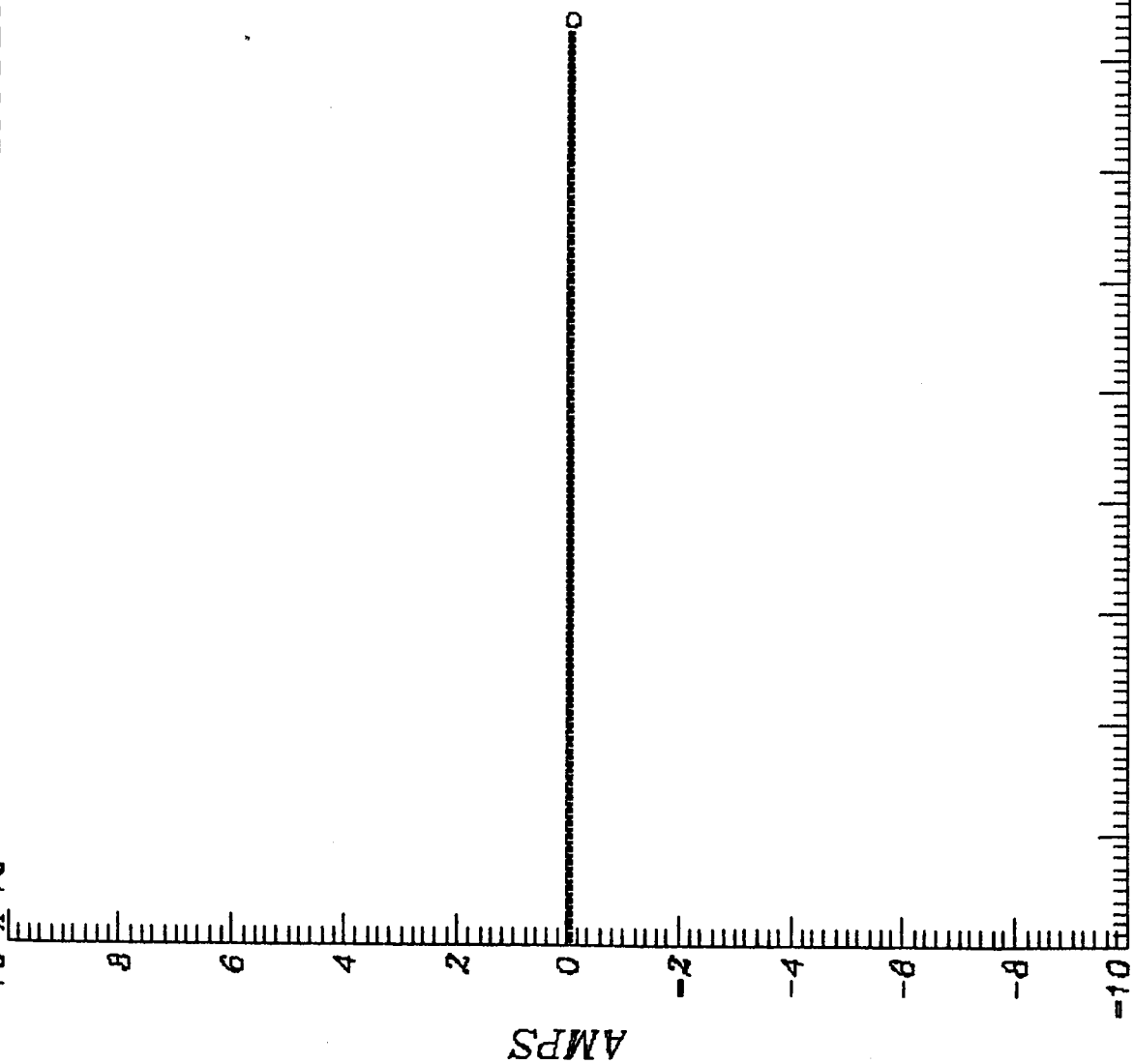
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MICROSEC.

80164.017

10 X 10³ 83.048 S-002 RUN 2 DATA LOGGER T58 1.0 KA I_N

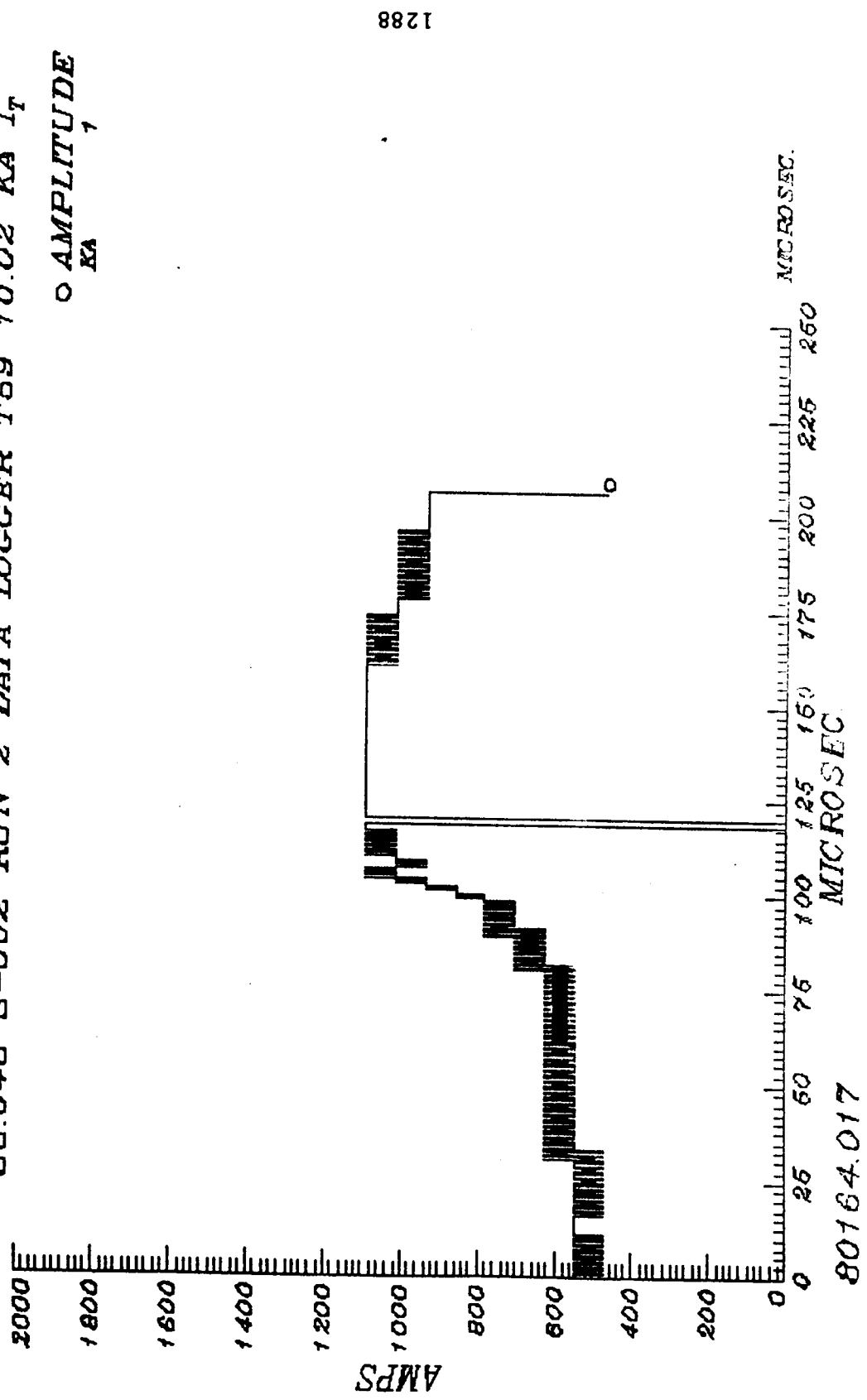
○ AMPLITUDE
KA 7



MICROSEC.

80164.017

83.048 S-002 RUN 2 DATA LOGGER T59 10.02 KA I_T
○ AMPLITUDE
KA 1



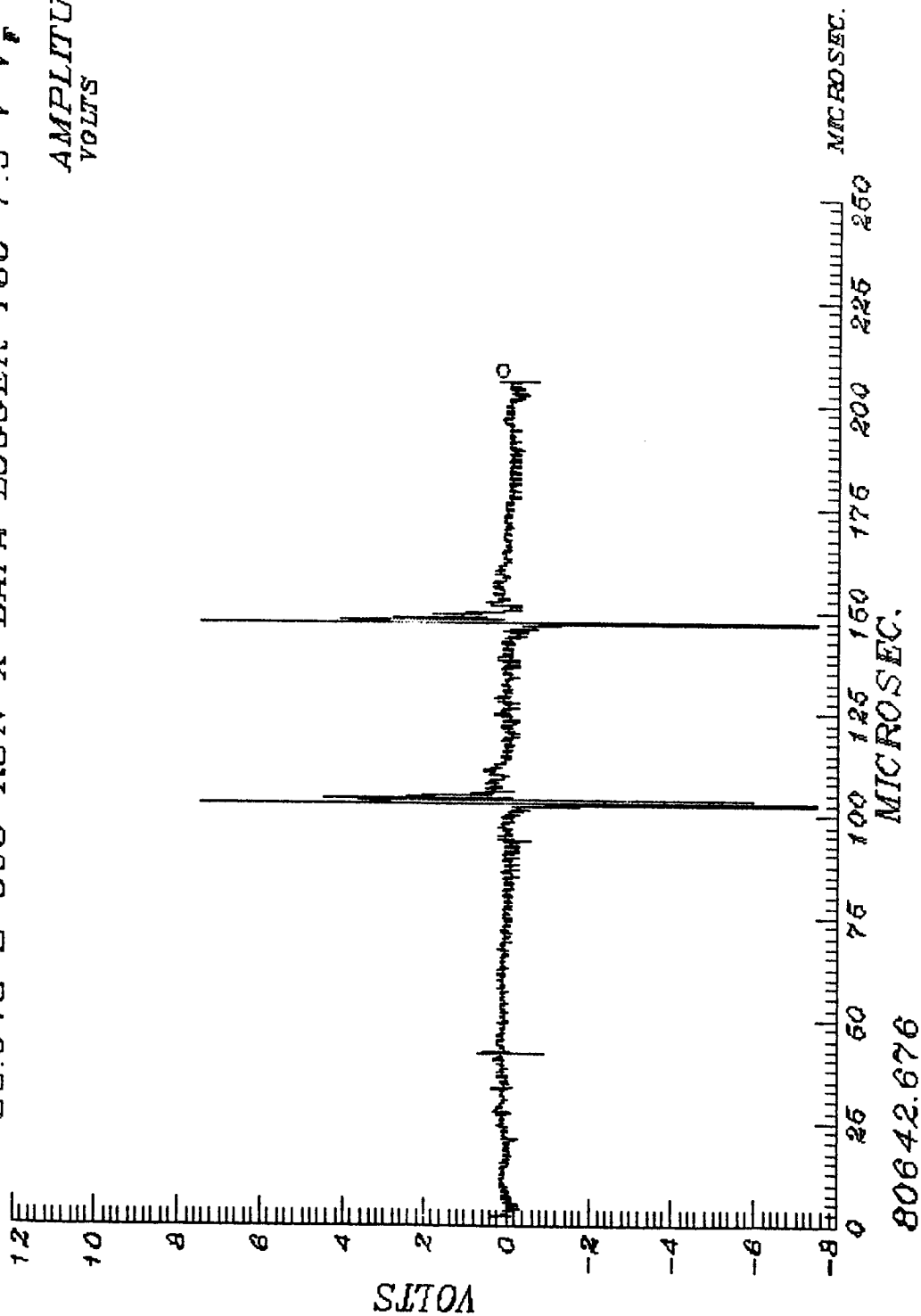
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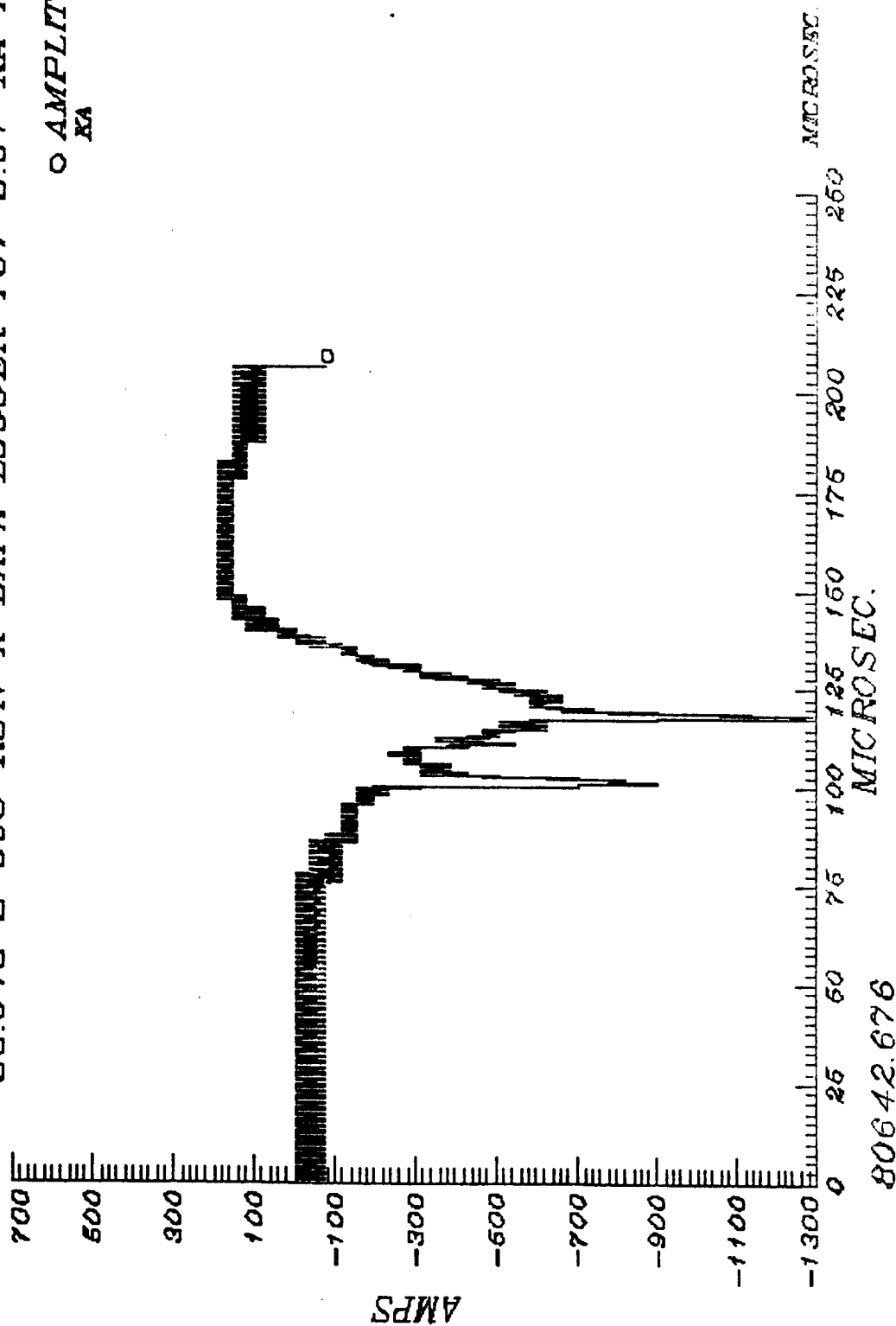
83.048 S-005 RUN X DATA LOGGER T60 7.5 V V_r

AMPLITUDE
VOLTS
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83.048 S-005 RUN X DATA LOGGER T61 5.01 KA I_N

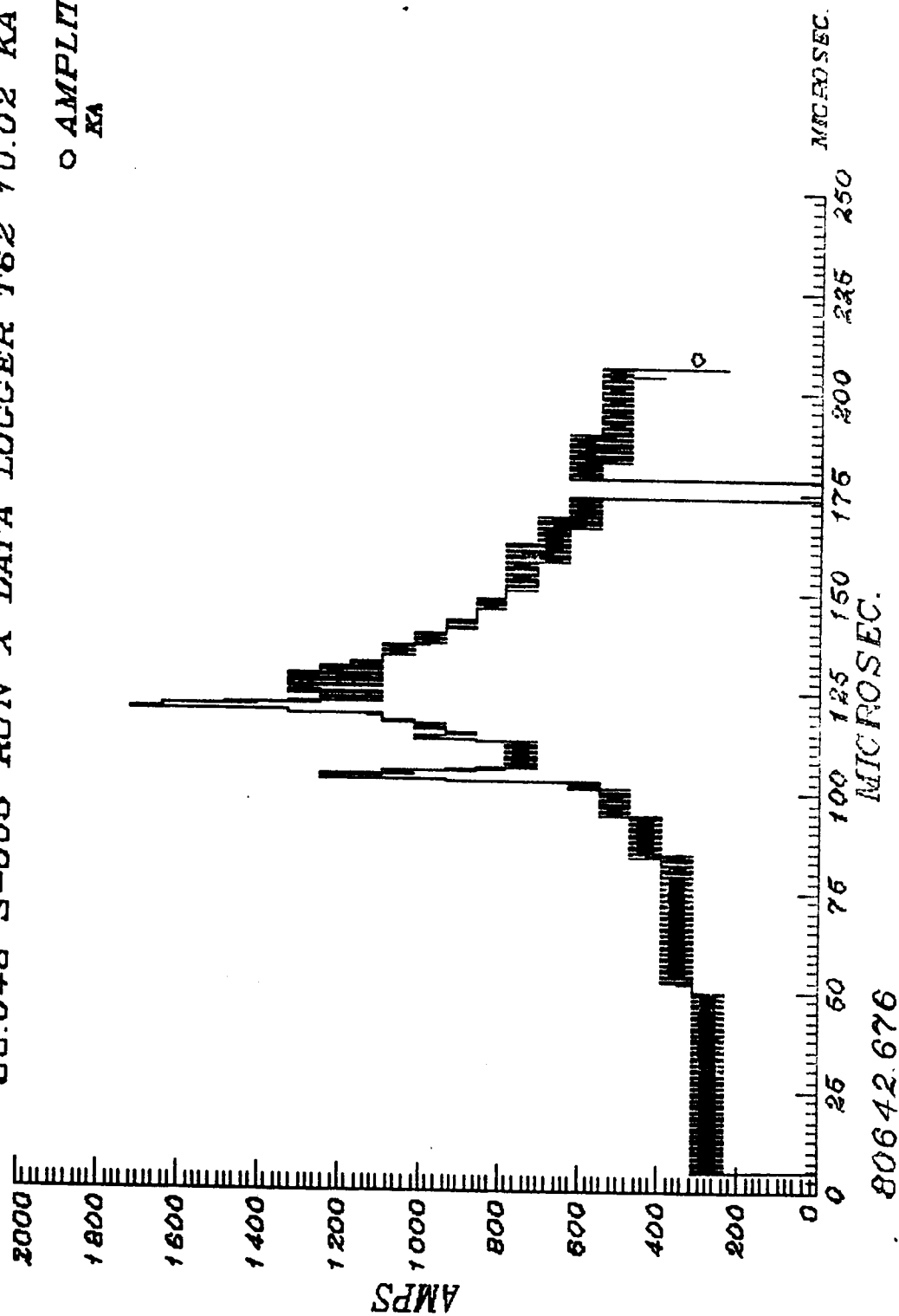
○ AMPLITUDE
KA 7



80642.676

1291

83.048 S-005 RUN X DATA LOGGER T62 10.02 KA I_T
○ AMPLITUDE
KA 1



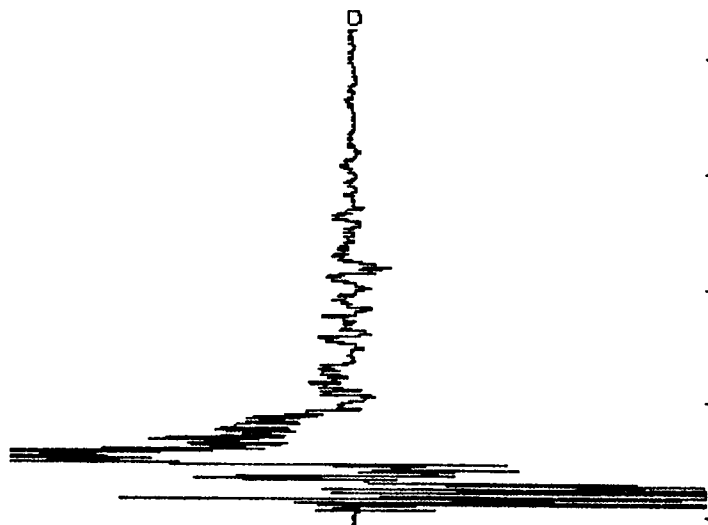
80642.676

1292

89.048 S-006 RUN 7 DATA LOGGER T63 7.5 V V_F

AMPLITUDE
VOLTS

VOLTS



MICROSEC.

81175.949

9.1 X 10³ 83.048 S-006 RUN 7 DATA LOGGER T84 5.01 KA I_N

○ AMPLITUDE
KA 1

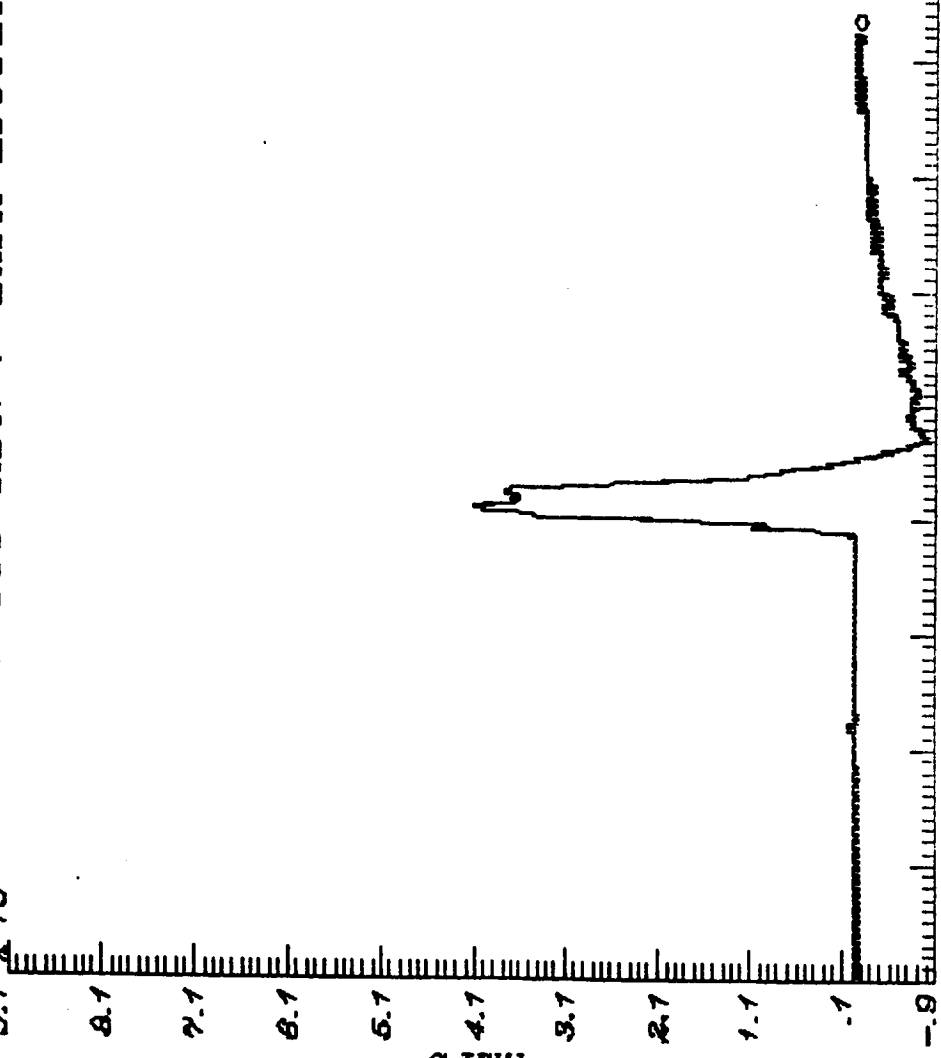
AMPS

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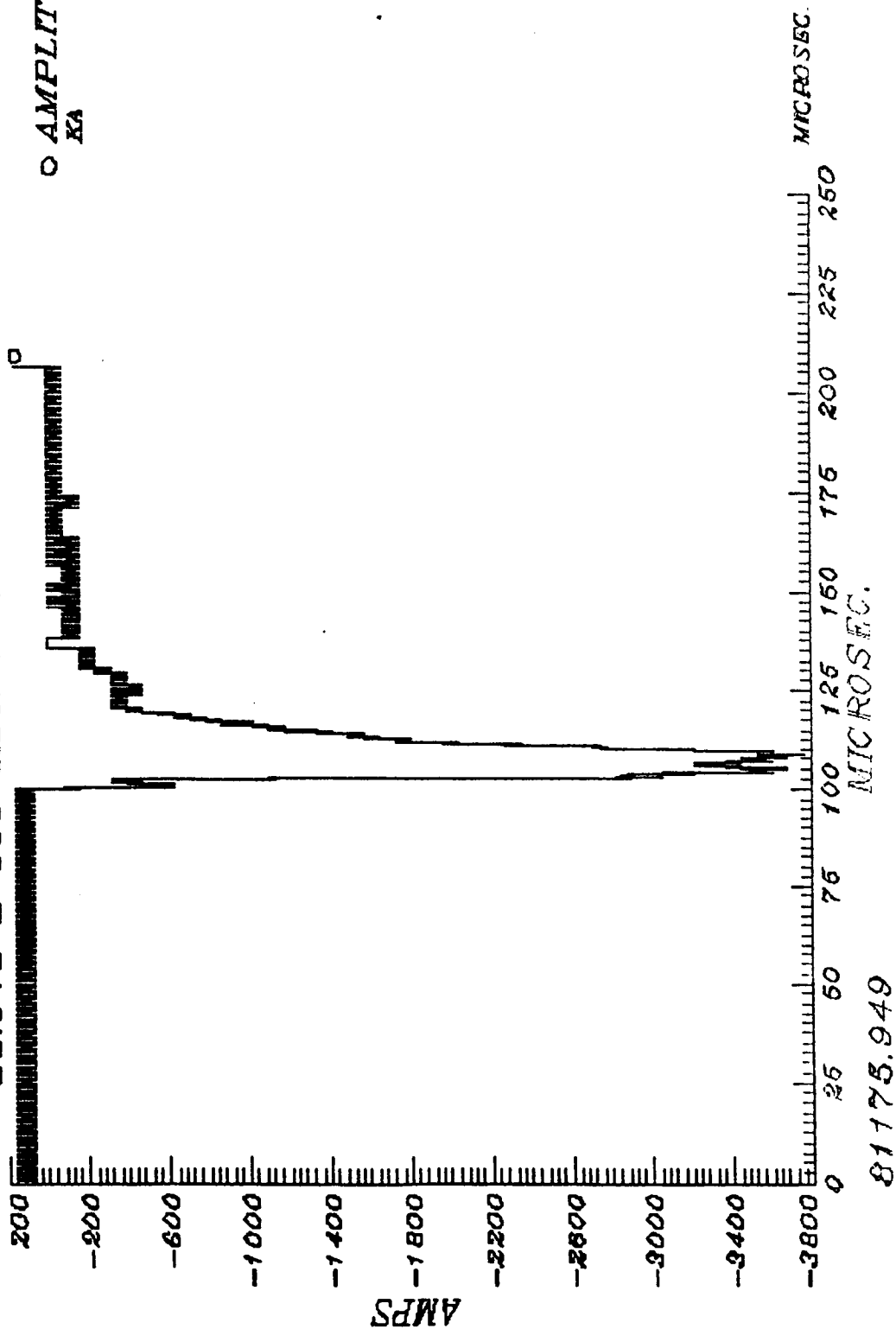
1293

0 25 50 75 100 125 150 175 200 225 250
MICROSEC. MICROSEC.

81175.949



89.048 S-006 RUN 7 DATA LOGGER T65 10.02 KA I_T
○ AMPLITUDE
KA 1

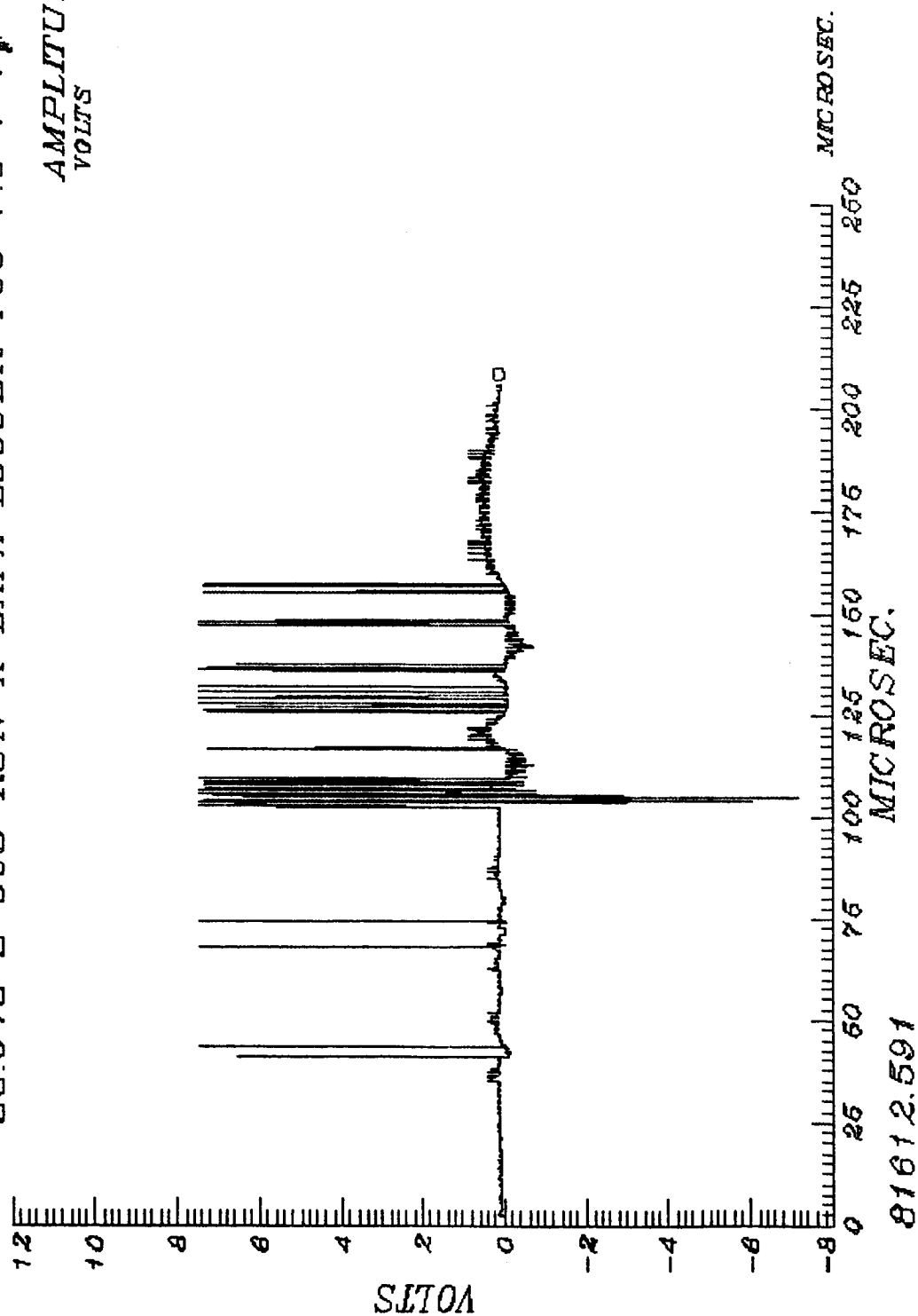


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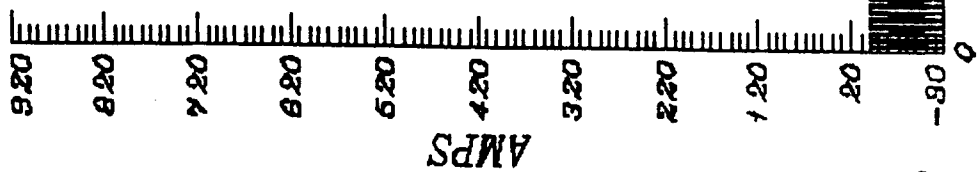
89.048 S-008 RUN X DATA LOGGER T66 7.5 V V_F

AMPLITUDE
VOLTS



89.048 S-008 RUN X DATA LOGGER T67 5.01 KA I_N

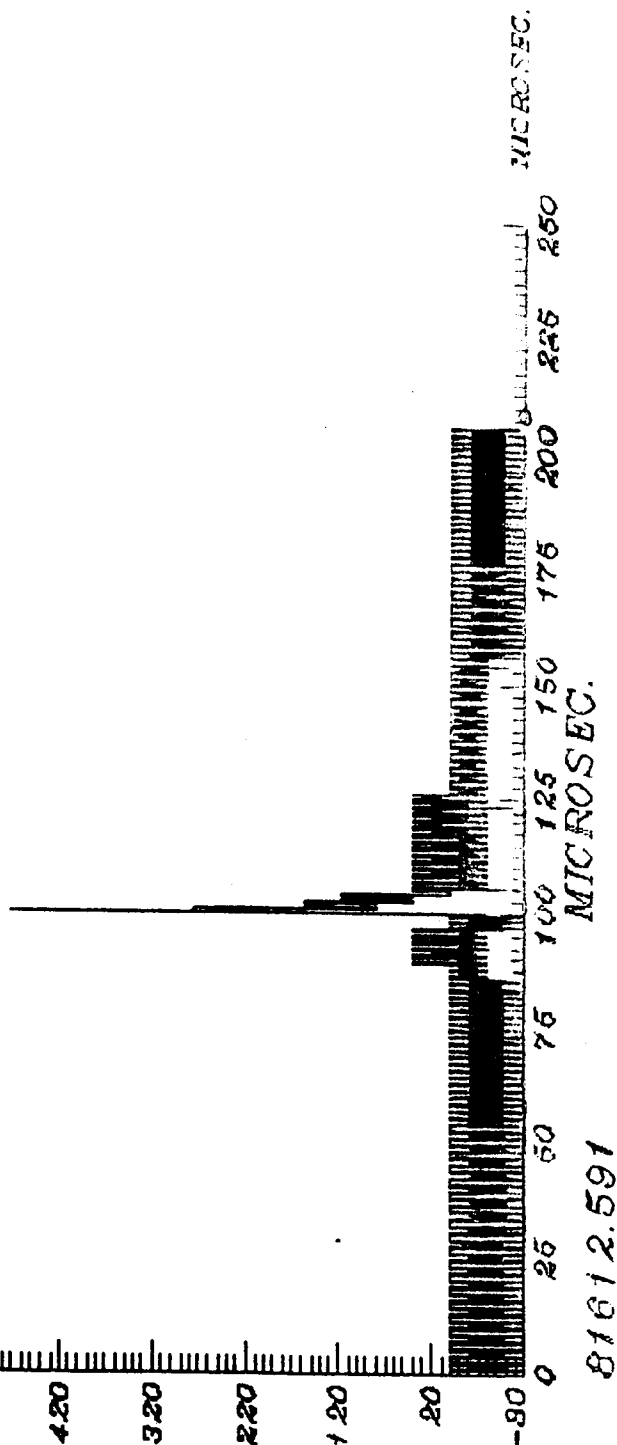
○ AMPLITUDE
KA 1



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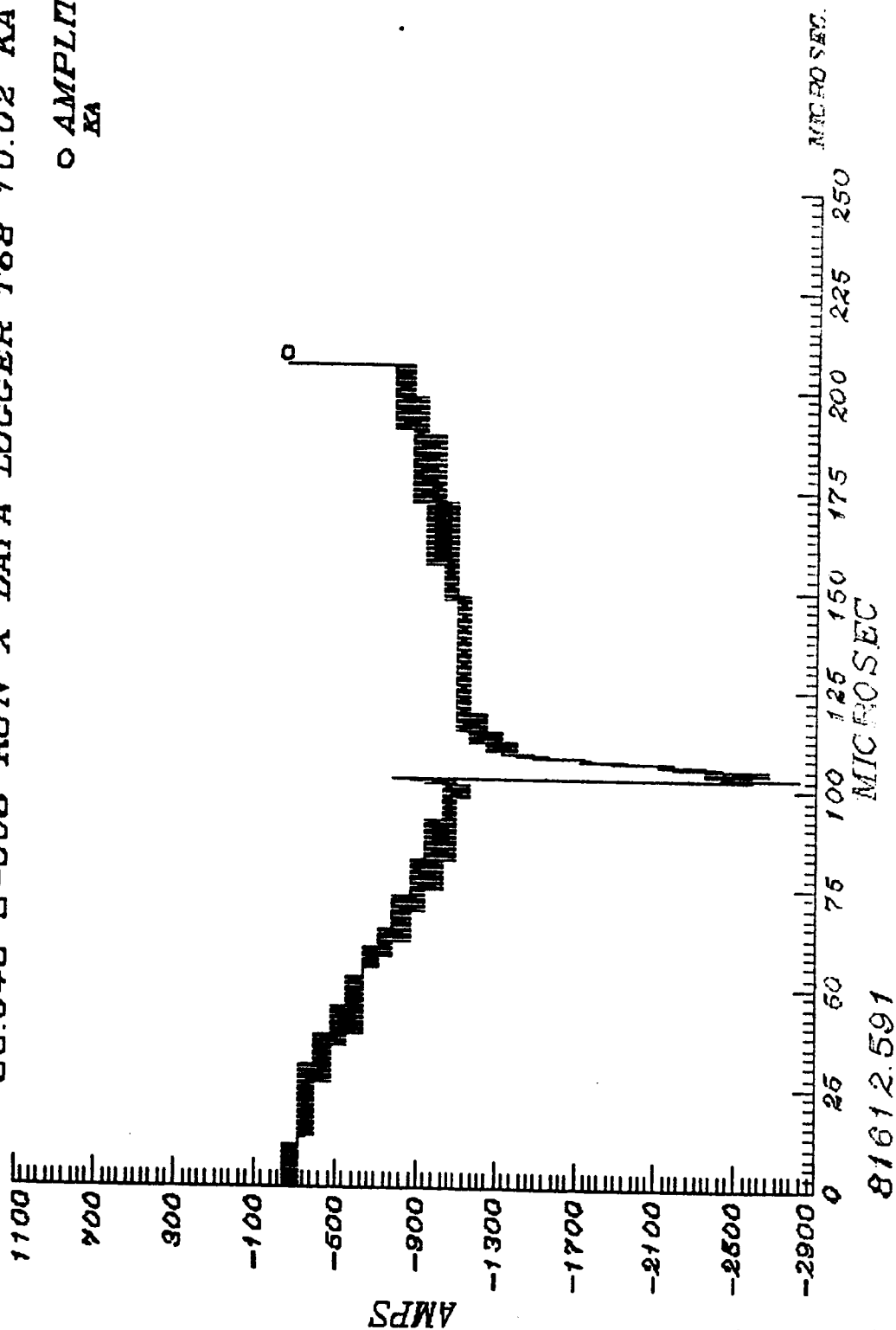
MICROSEC.

MICROSEC.

81612.591

89.048 S-008 RUN X DATA LOGGER T68 10.02 KA I_T

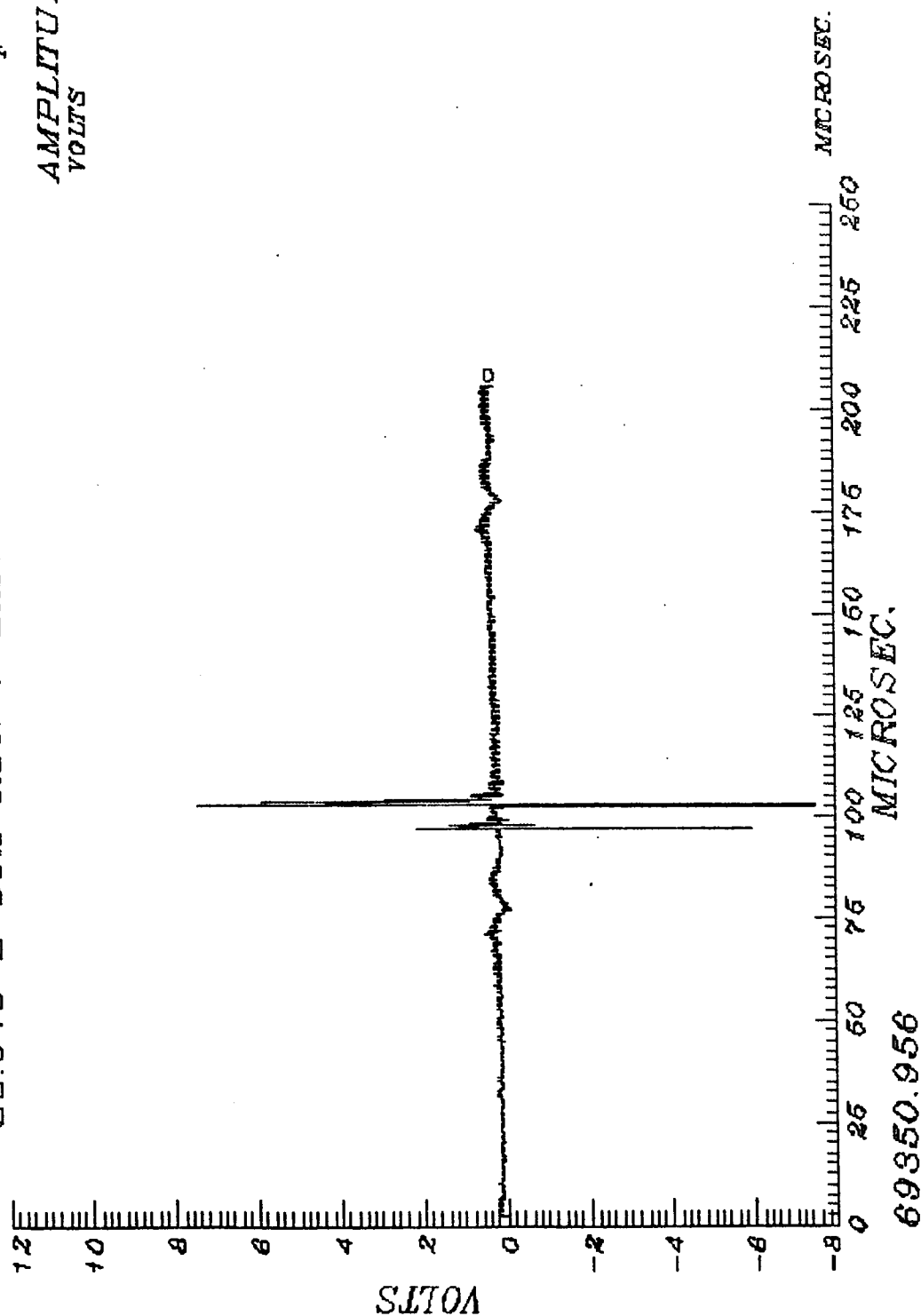
○ AMPLITUDE
KA



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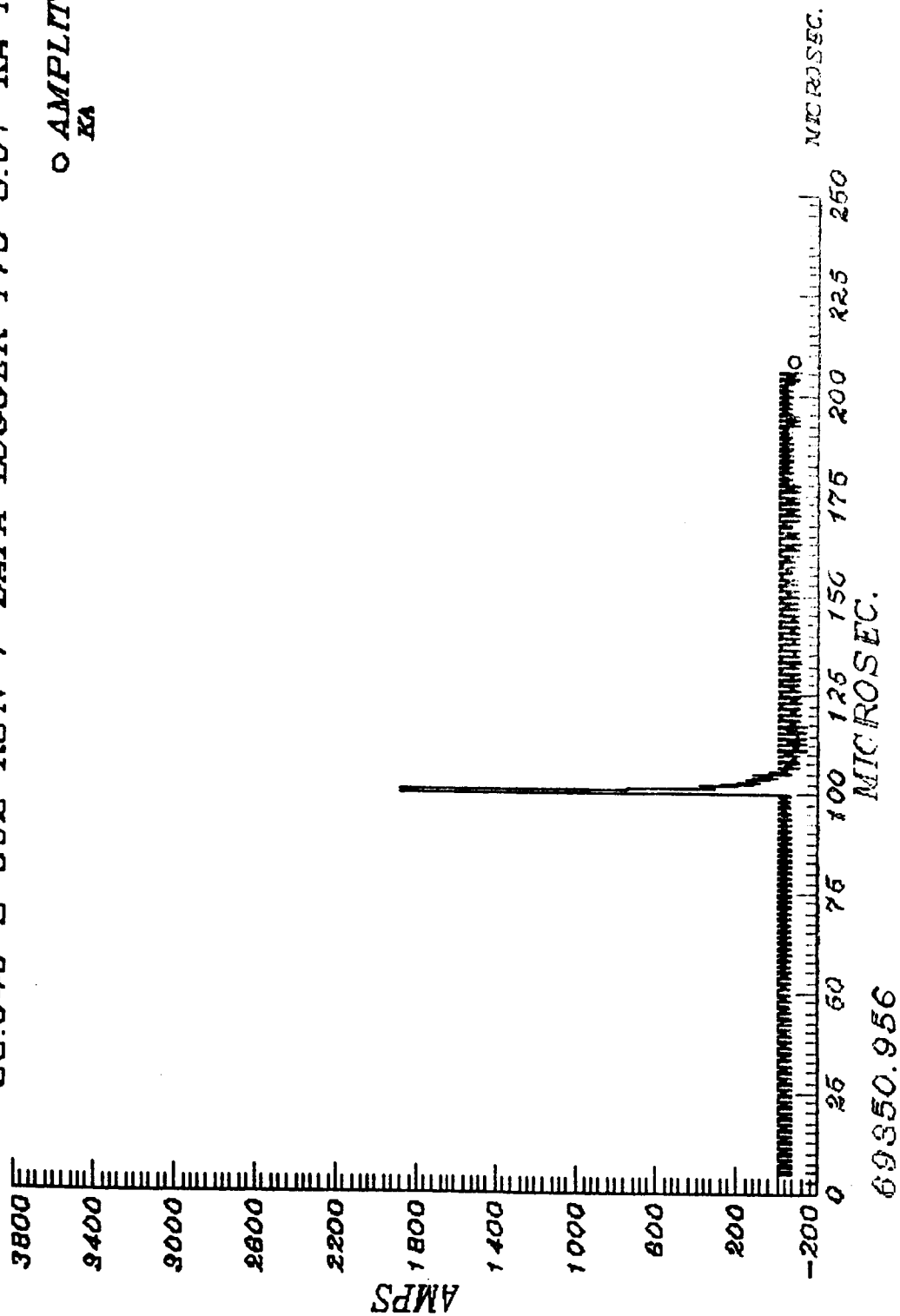
83.049 S-002 RUN 1 DATA LOGGER T69 7.5 V V_F

AMPLITUDE
VOLTS 1



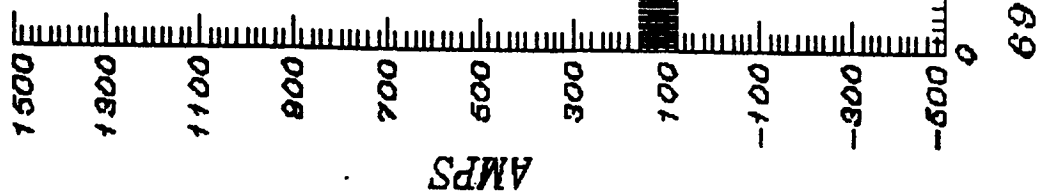
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89.049 S-002 RUN 1 DATA LOGGER T70 5.01 KA I_N
O AMPLITUDE
KA 7



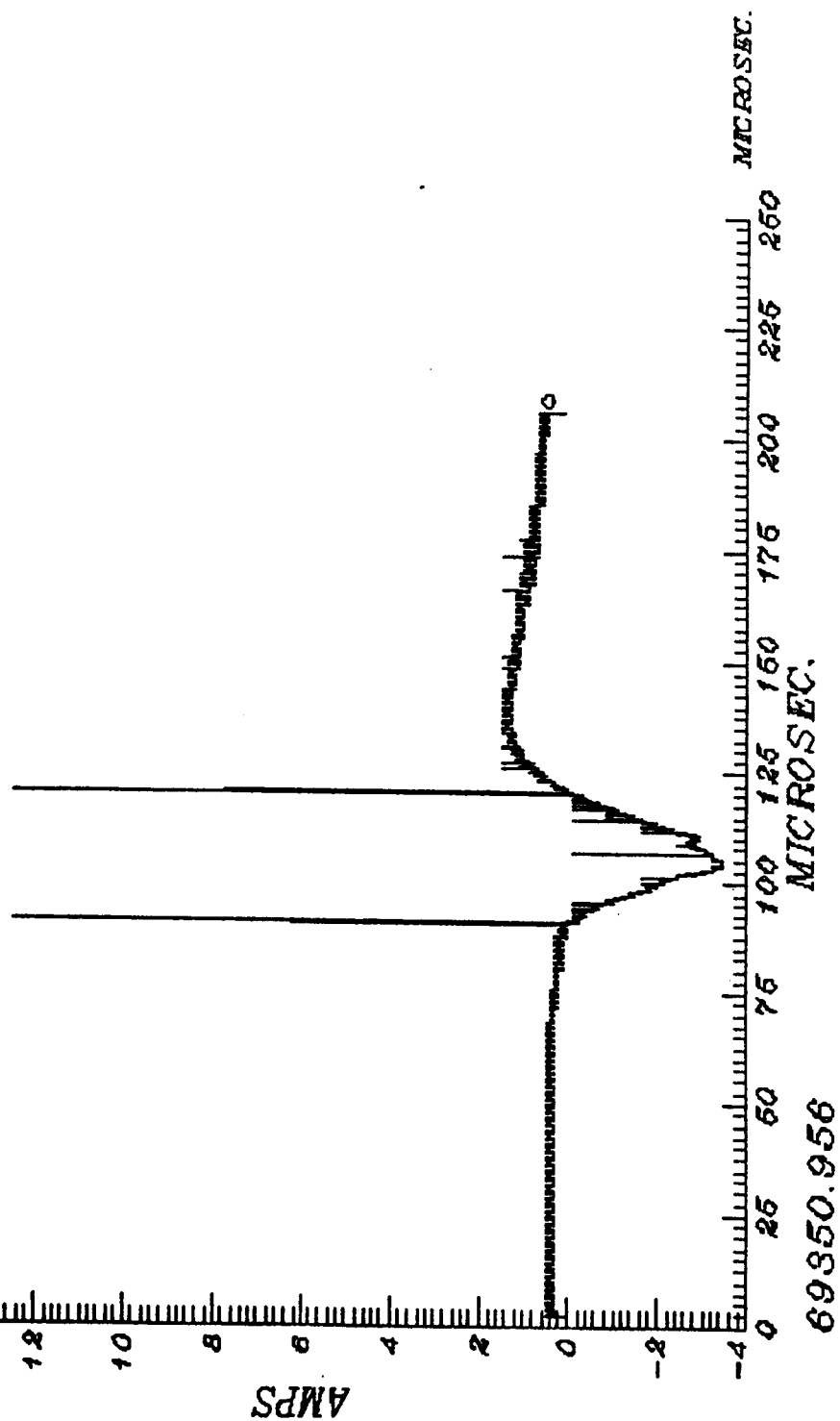
89.049 S-002 RUN 1 DATA LOGGER T71 10.02 KA I_T

○ AMPLITUDE
KA 1



1300

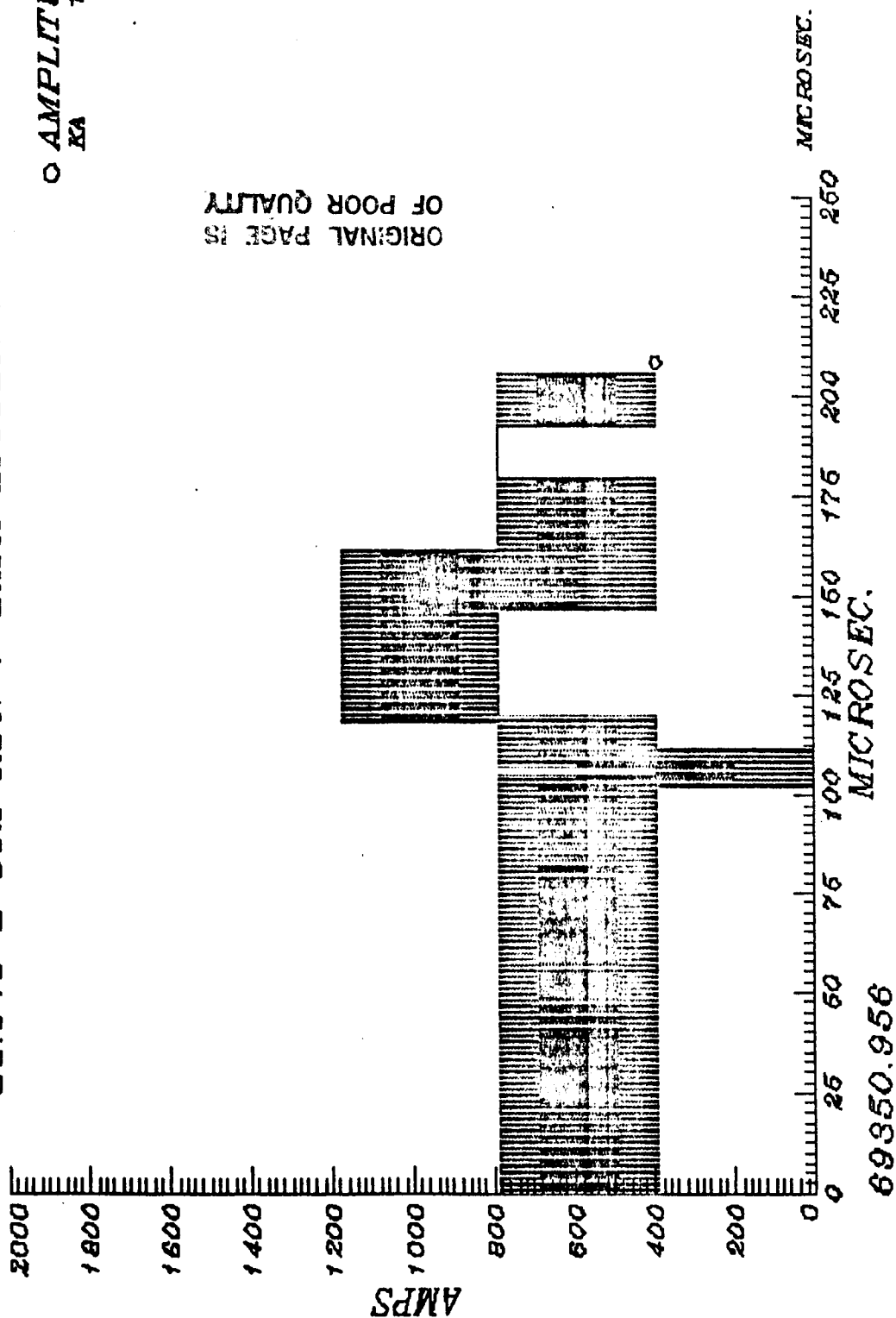
10 X 10⁹ 83.049 S-002 RUN 1 DATA LOGGER T28 12.60 KA I_N
 ○ AMPLITUDE
 KA 1



69350.956

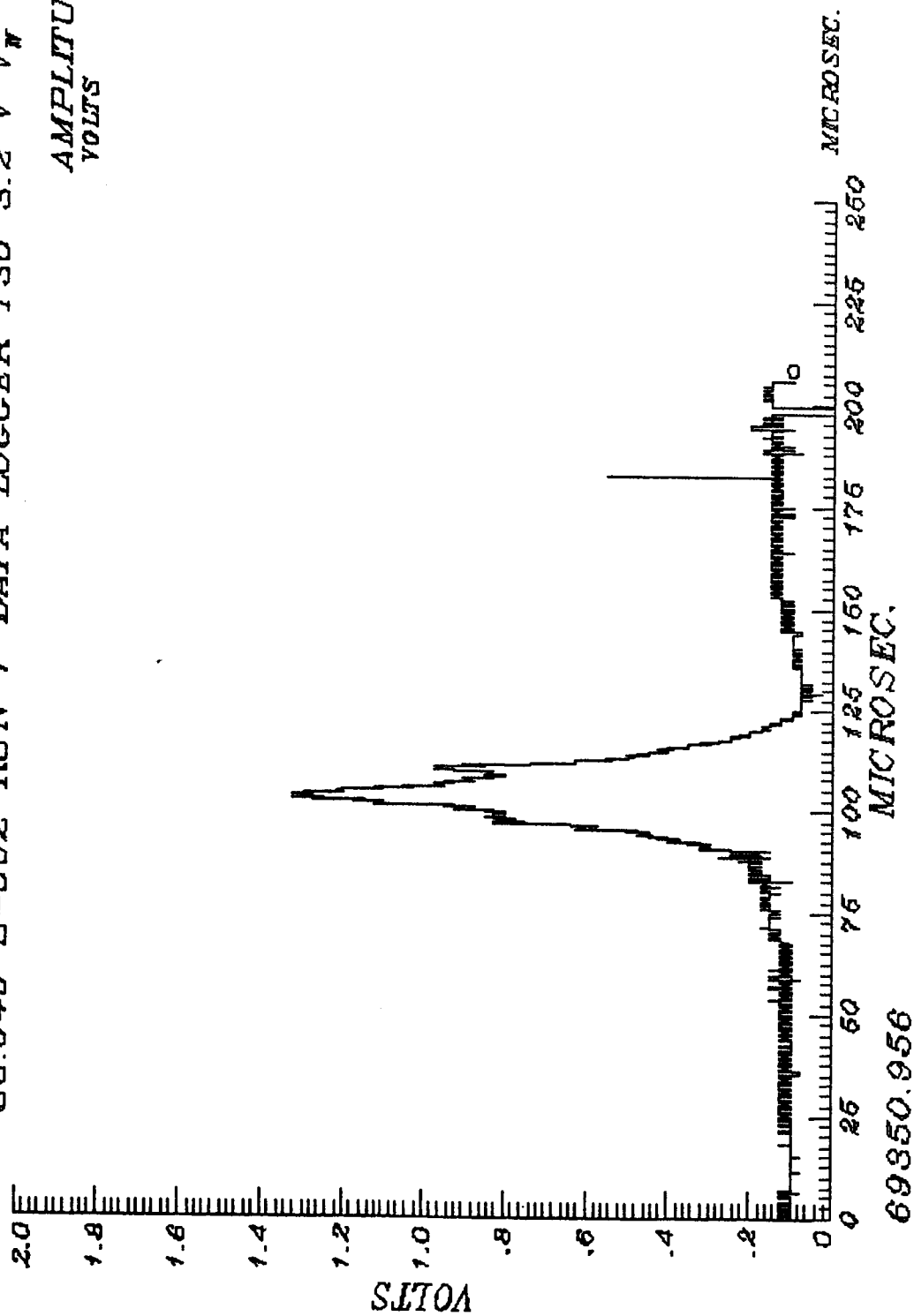
83.049 S-002 RUN 1 DATA LOGGER T29 50.24 KA I_T

○ AMPLITUDE
KA 1



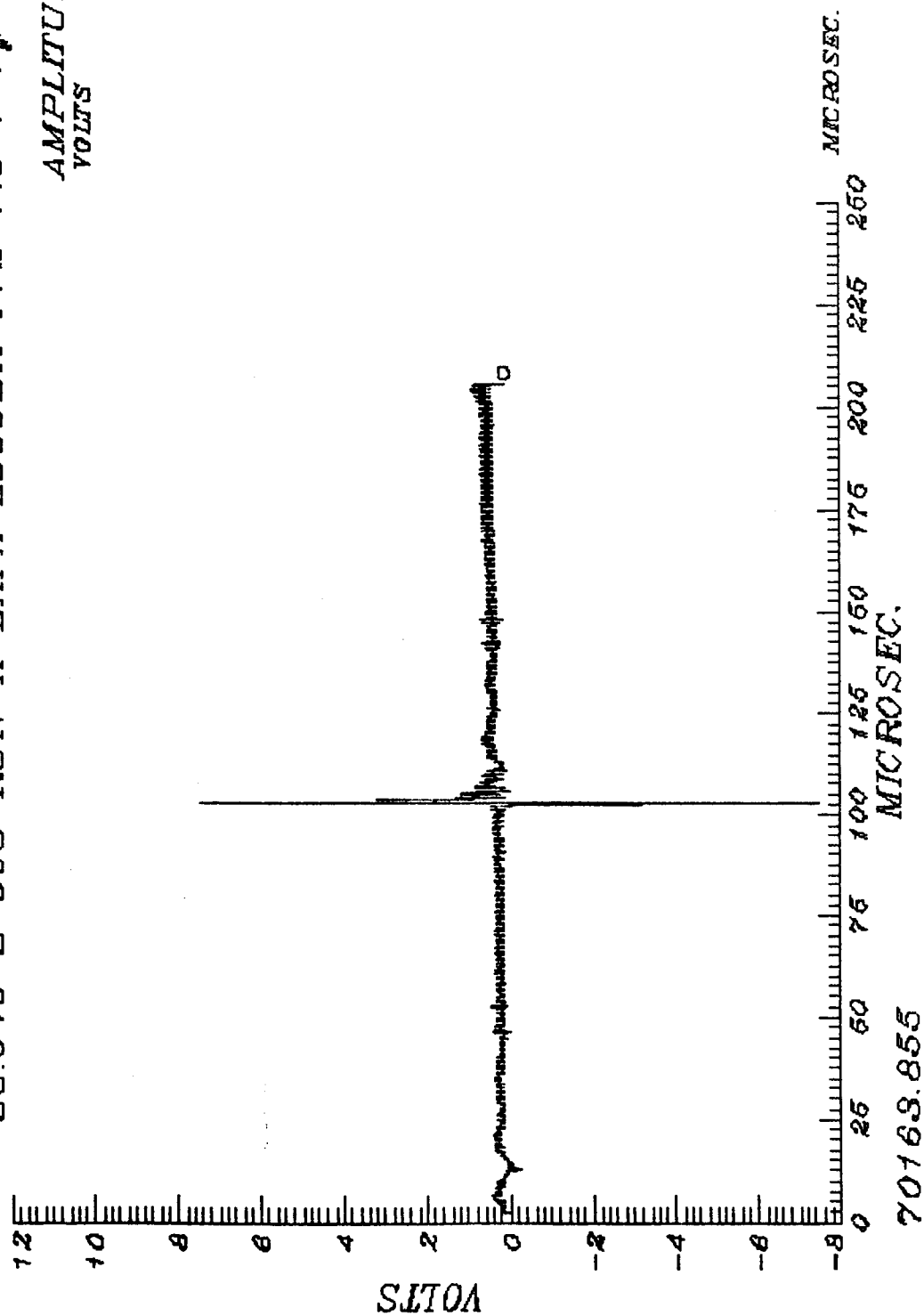
89.049 S-002 RUN 1 DATA LOGGER T30 3.2 V V_N

AMPLITUDE
VOLTS 1



83.049 S-003 RUN X DATA LOGGER T72 7.5 V V_r

AMPLITUDE
VOLTS 1



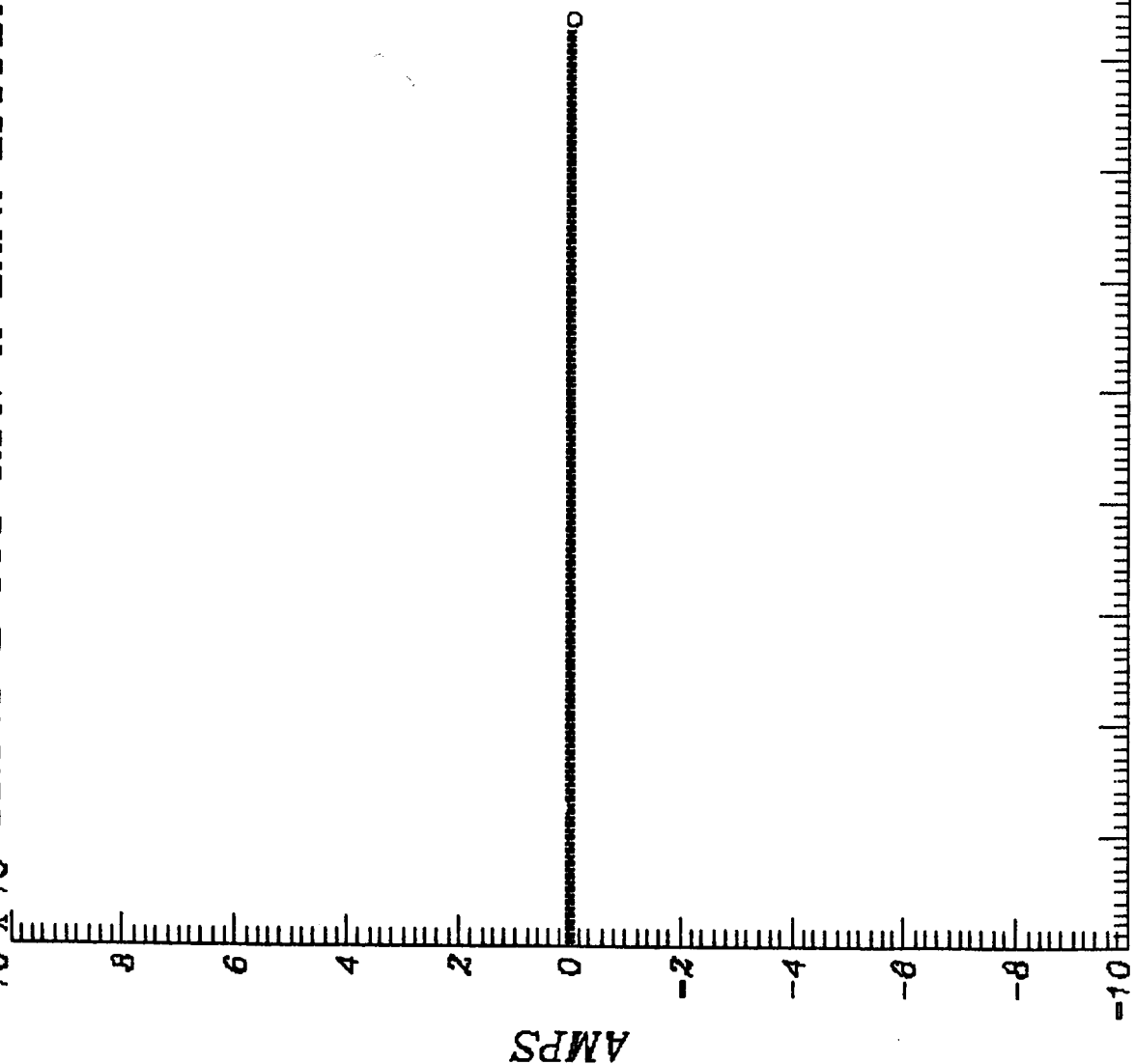
VOLTS

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MICROSEC.

10 X 10³ 83.049 S-003 RUN X DATA LOGGER T73 1.0 KA I_N

○ AMPLITUDE
KA 1



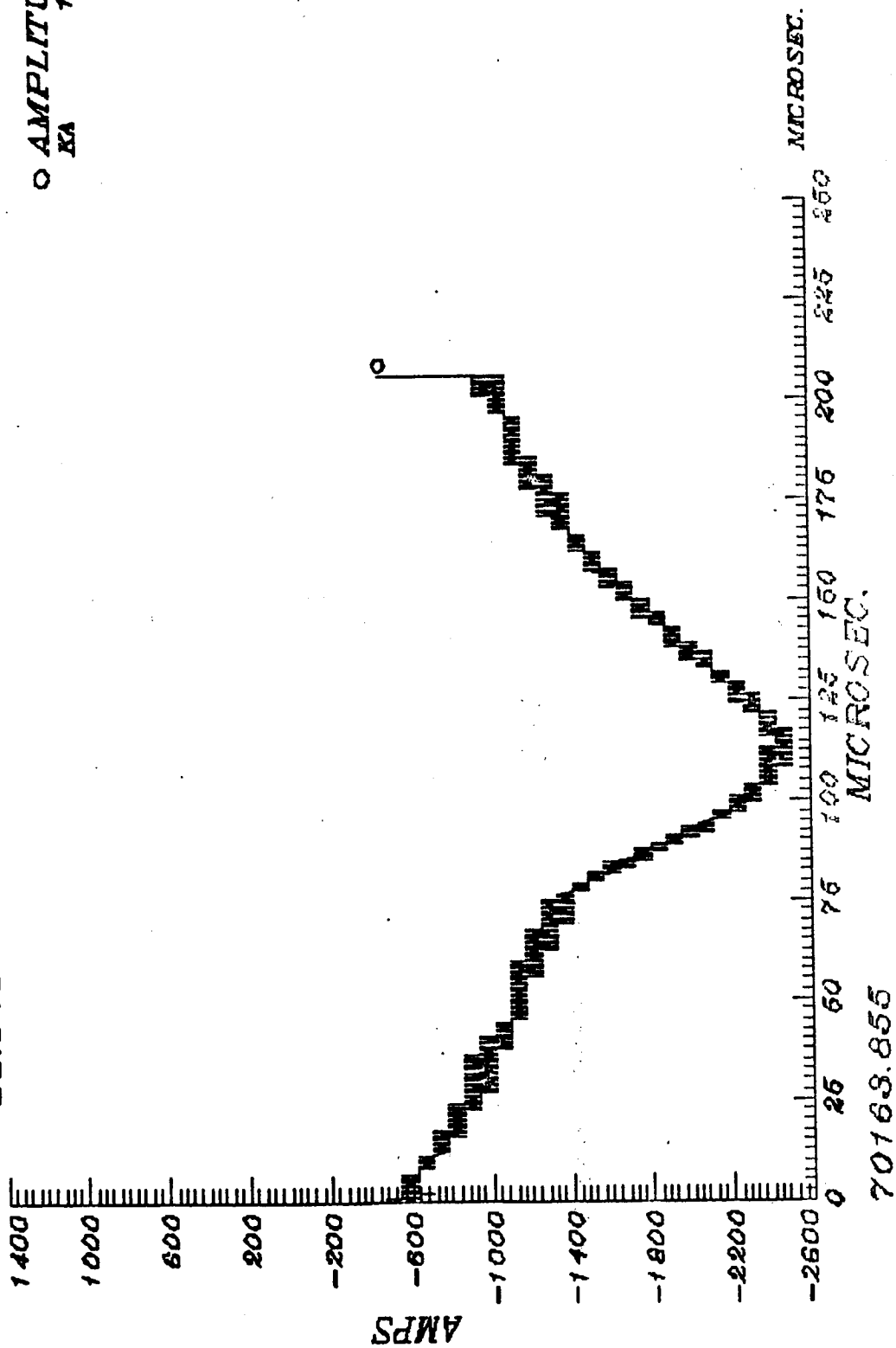
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70163.855

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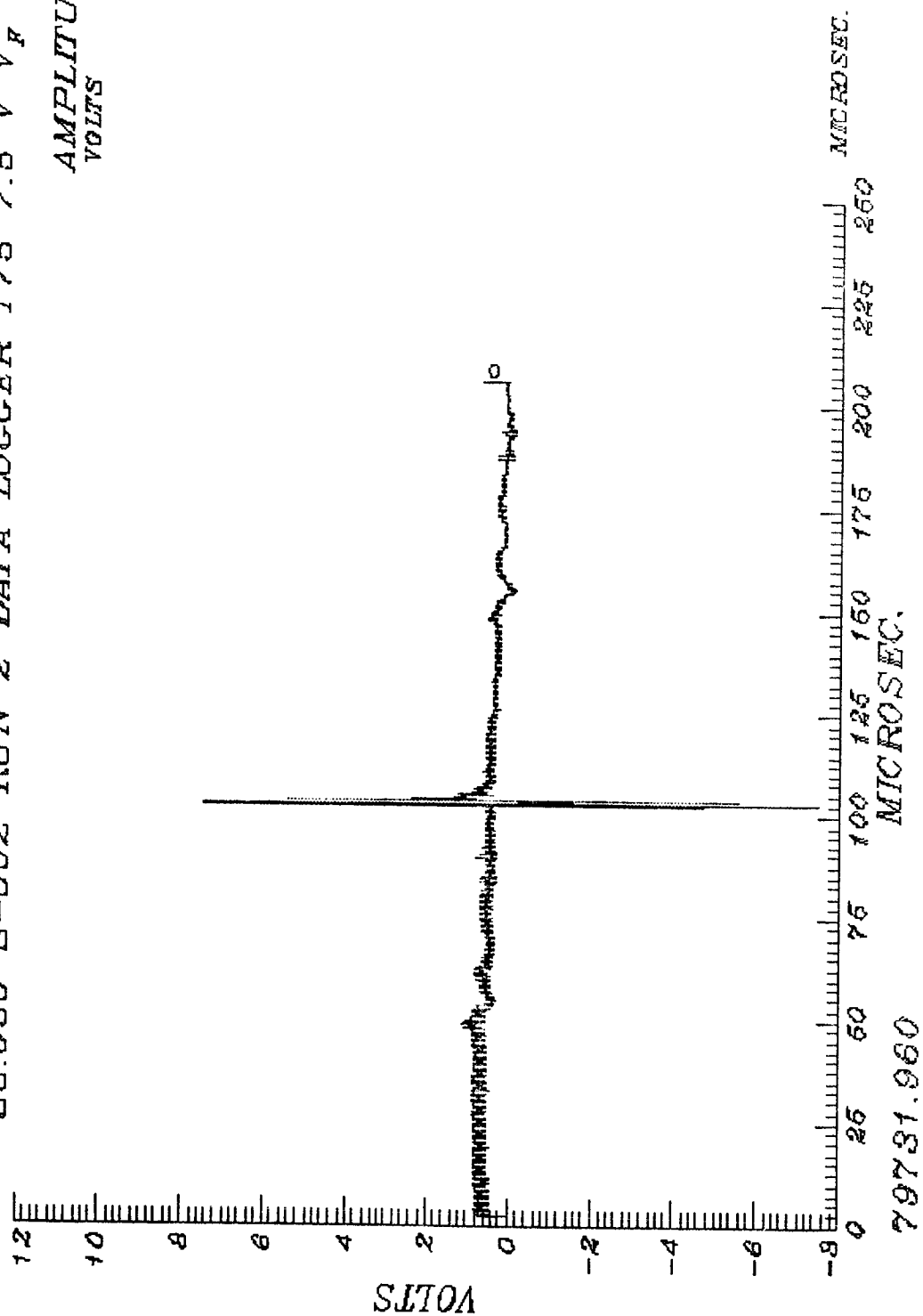
83.049 S-003 RUN X DATA LOGGER T74 10.02 KA I_T

○ AMPLITUDE
KA



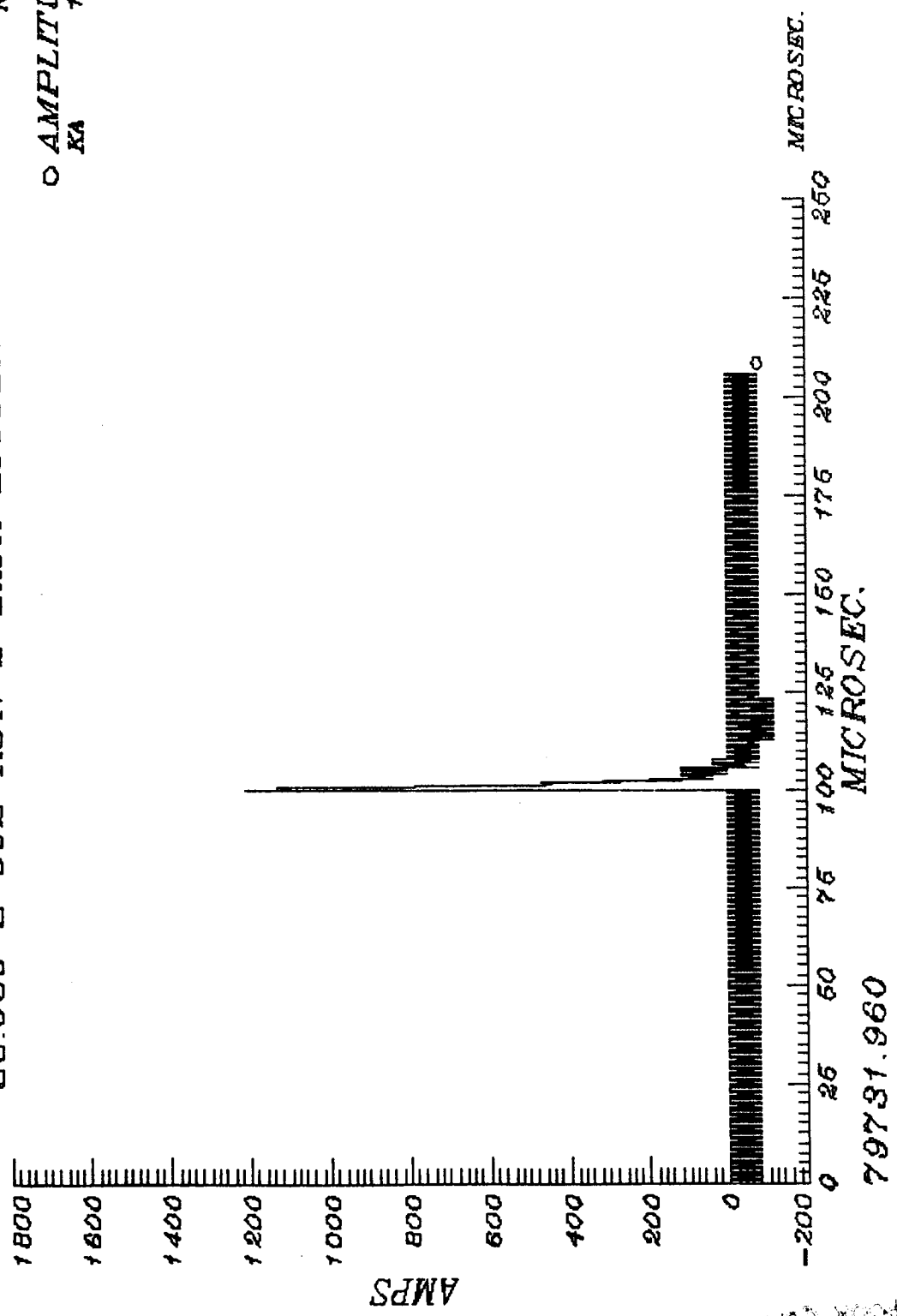
89.050 S-002 RUN 2 DATA LOGGER T75 7.5 V V_R

AMPLITUDE
VOLTS 1



VOLTS

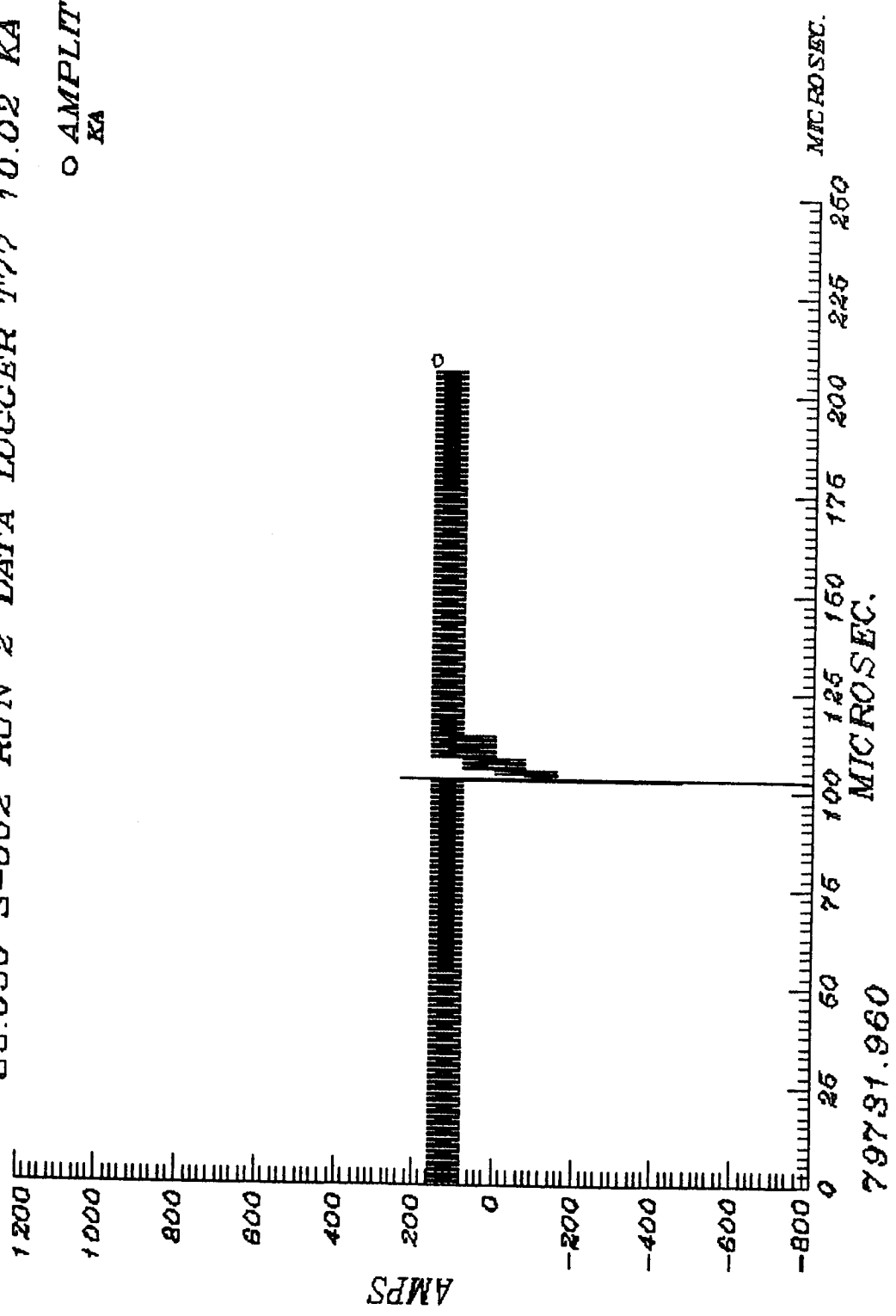
89.050 S-002 RUN 2 DATA LOGGER T78 5.01 KA I_N
 O AMPLITUDE
 KA 7



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 OF FOUR COPIES

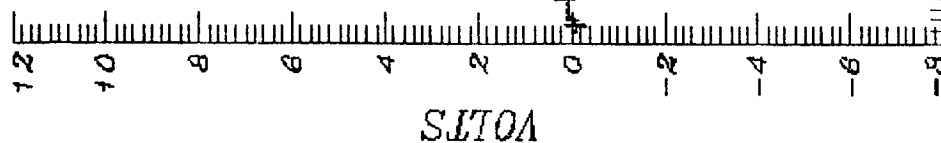
79731.960

83.050 S-002 RUN 2 DATA LOGGER T77 10.02 KA I_T
 ○ AMPLITUDE
 KA 1

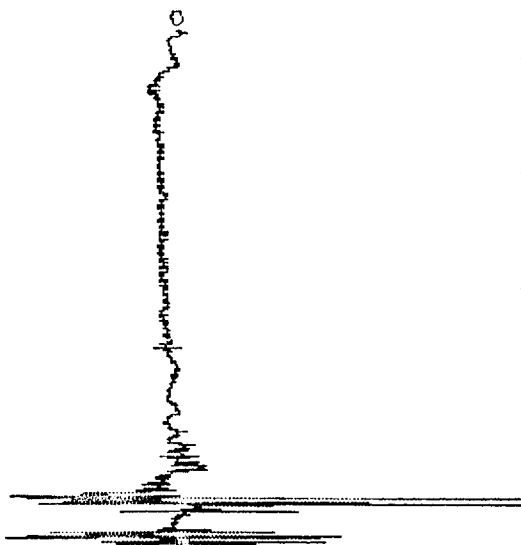


83.050 S-007 RUN X DATA LOGGER T78 7.5 V V_F

AMPLITUDE
VOLTS
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VOLTS



80554.677
MICROSEC.
MICROSEC.
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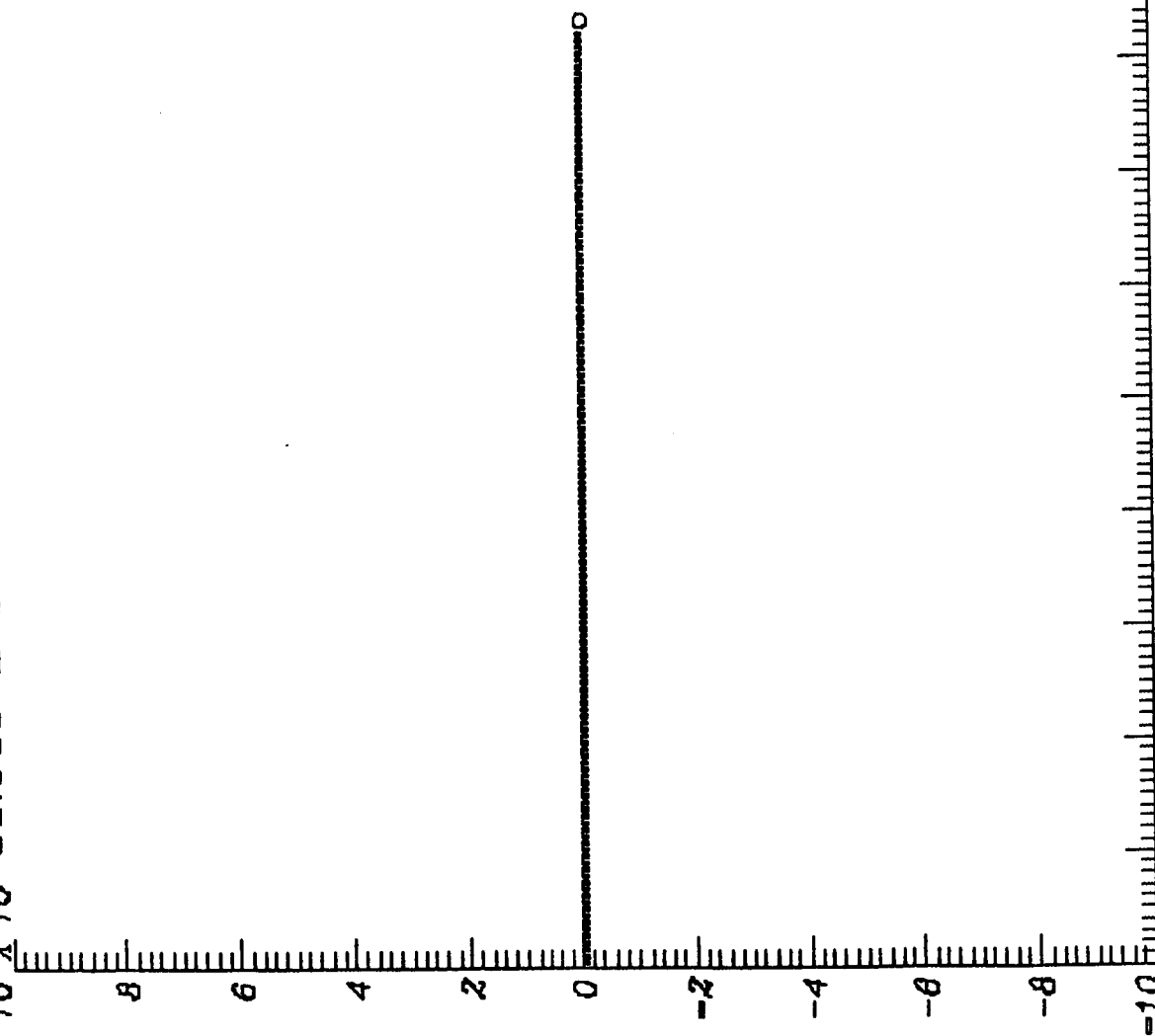
10 X 10⁹ 83.050 S-007 RUN X DATA LOGGER T79 1.0 KA I_N

○ AMPLITUDE
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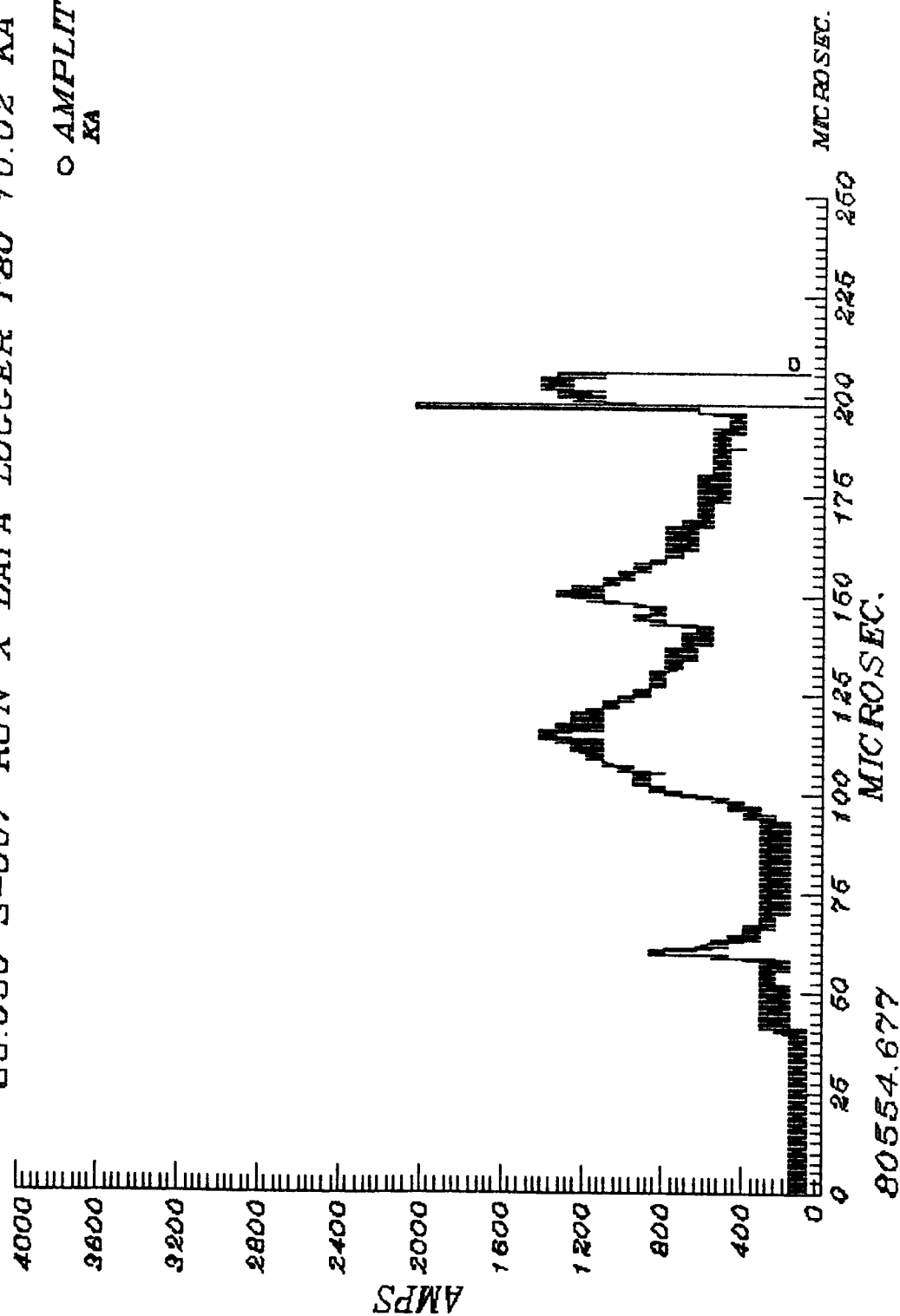
AMPS



0 25 50 75 100 125 150 175 200 225 250
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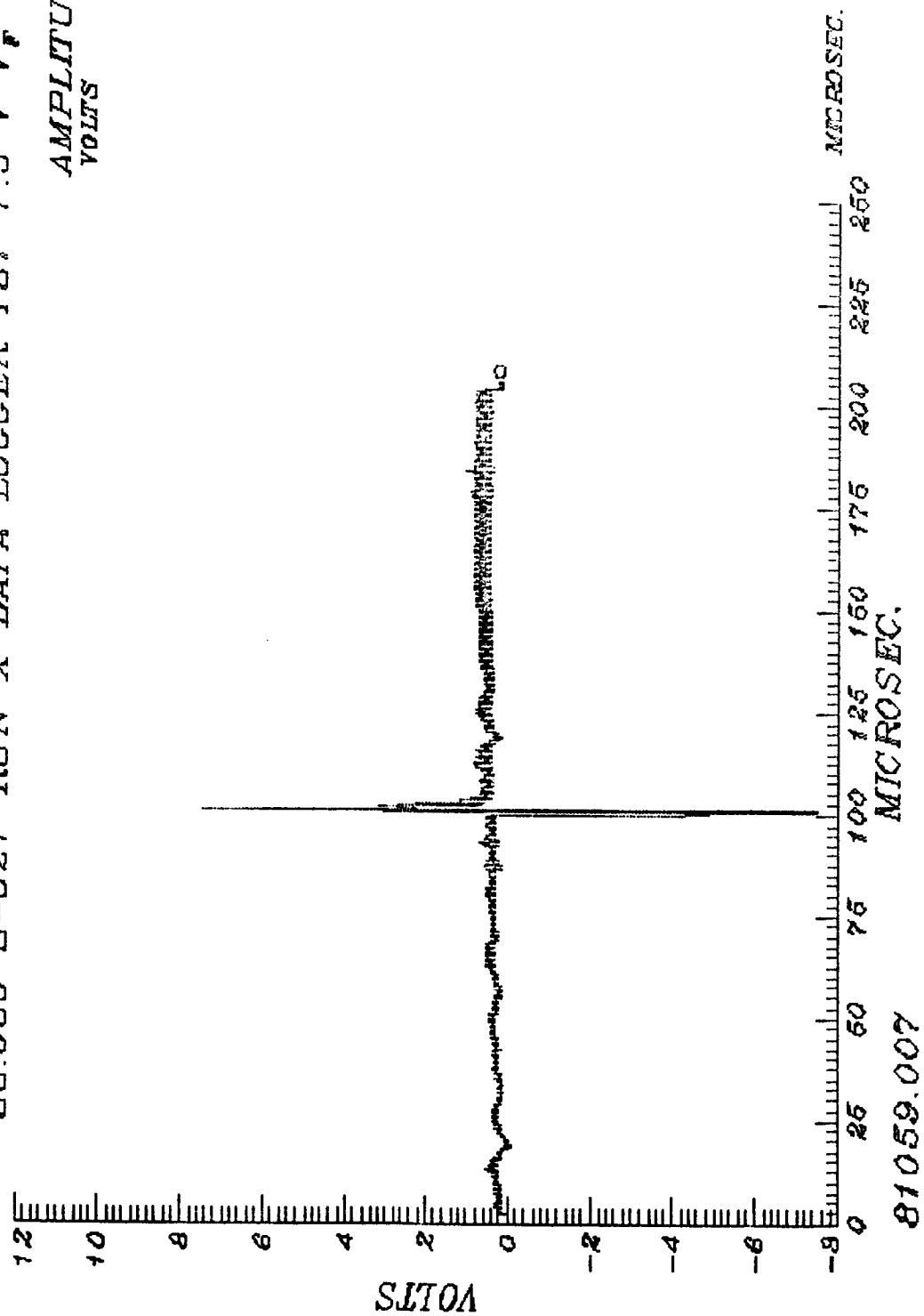
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83.050 S-007 RUN X DATA LOGGER T80 10.02 KA I_T
 ○ AMPLITUDE
 KA 1



89.050 S-021 RUN X DATA LOGGER T81 7.5 V V_r

AMPLITUDE
VOLTS 1

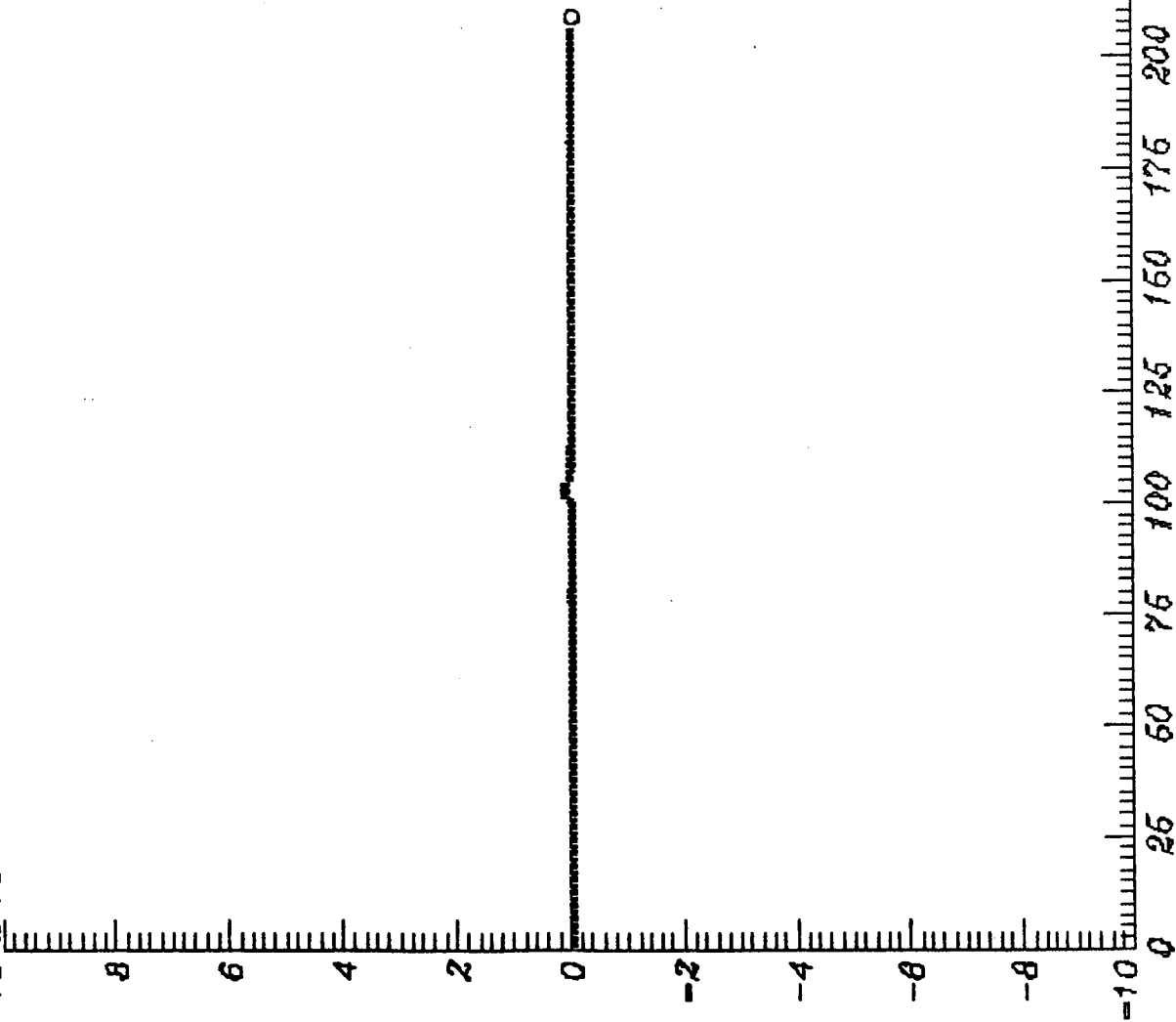


1313

10 X 10³ 83.050 S-021 RUN X DATA LOGGER T82 1.0 KA I_N

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AMPS

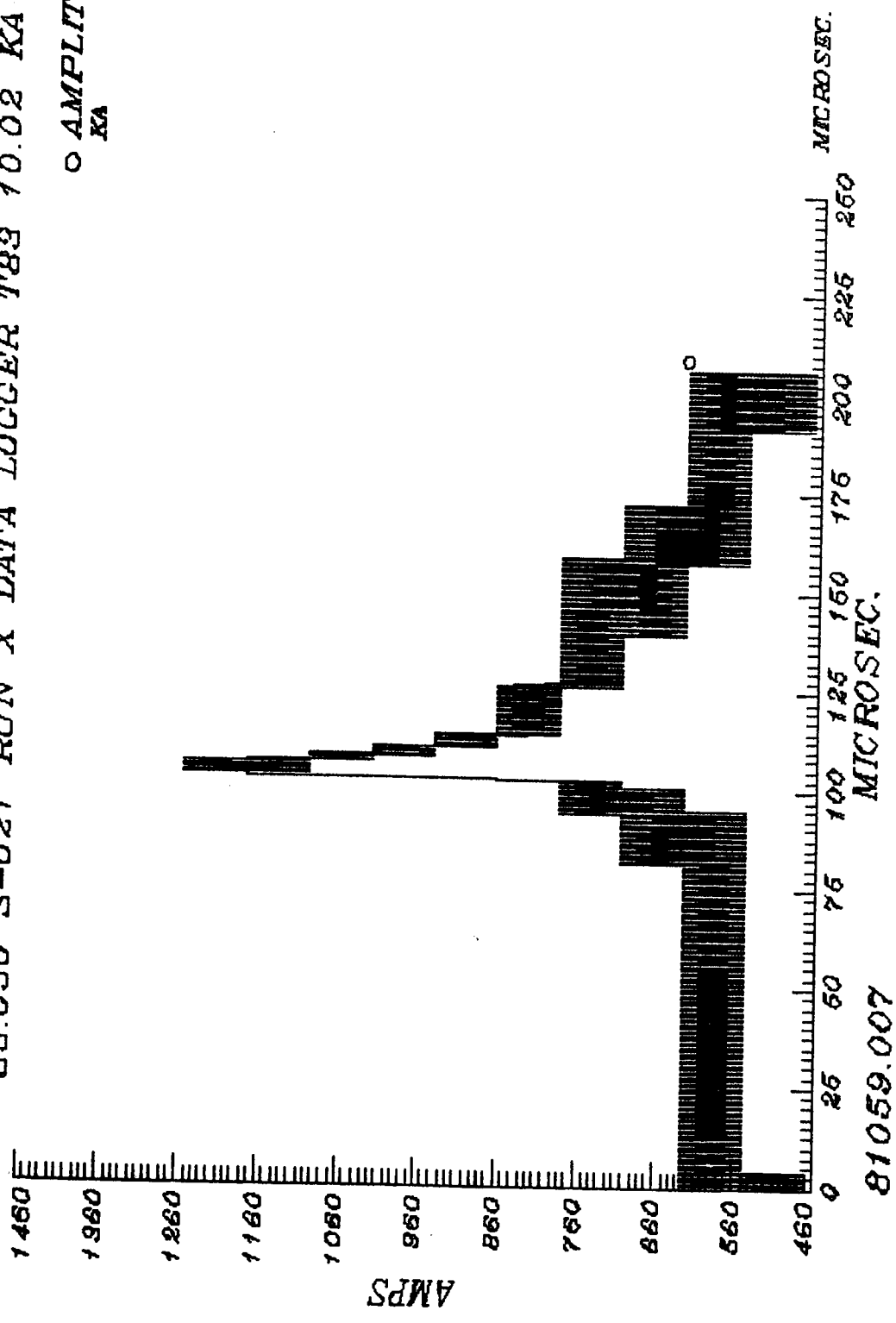


MICROSEC.

81059.007

MICROSEC.

83.050 S-021 RUN X DATA LOGGER T83 10.02 KA I_T
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AMPS

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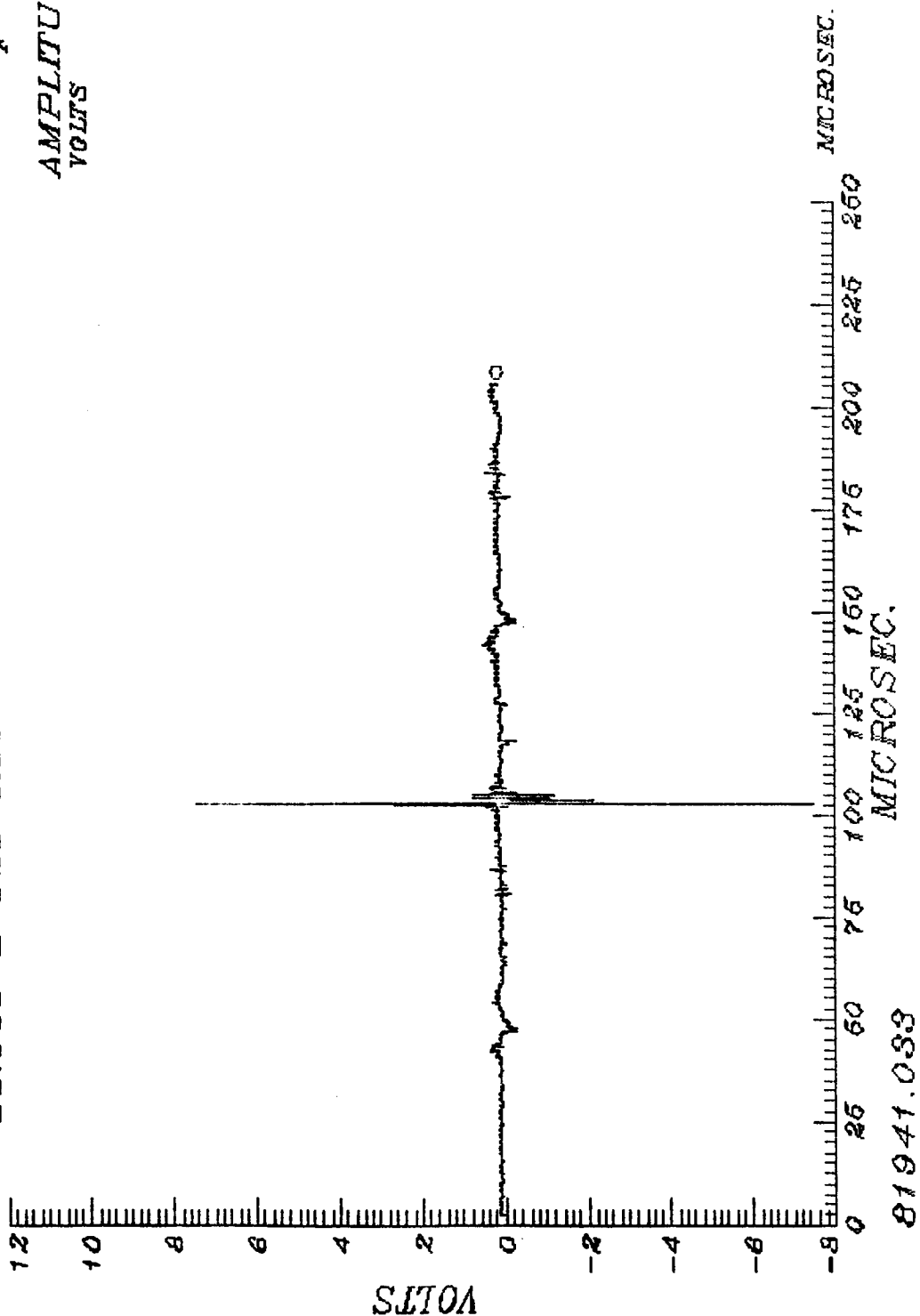
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1315

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89.050 S-023 RUN 7 DATA LOGGER T84 7.5 V V_R

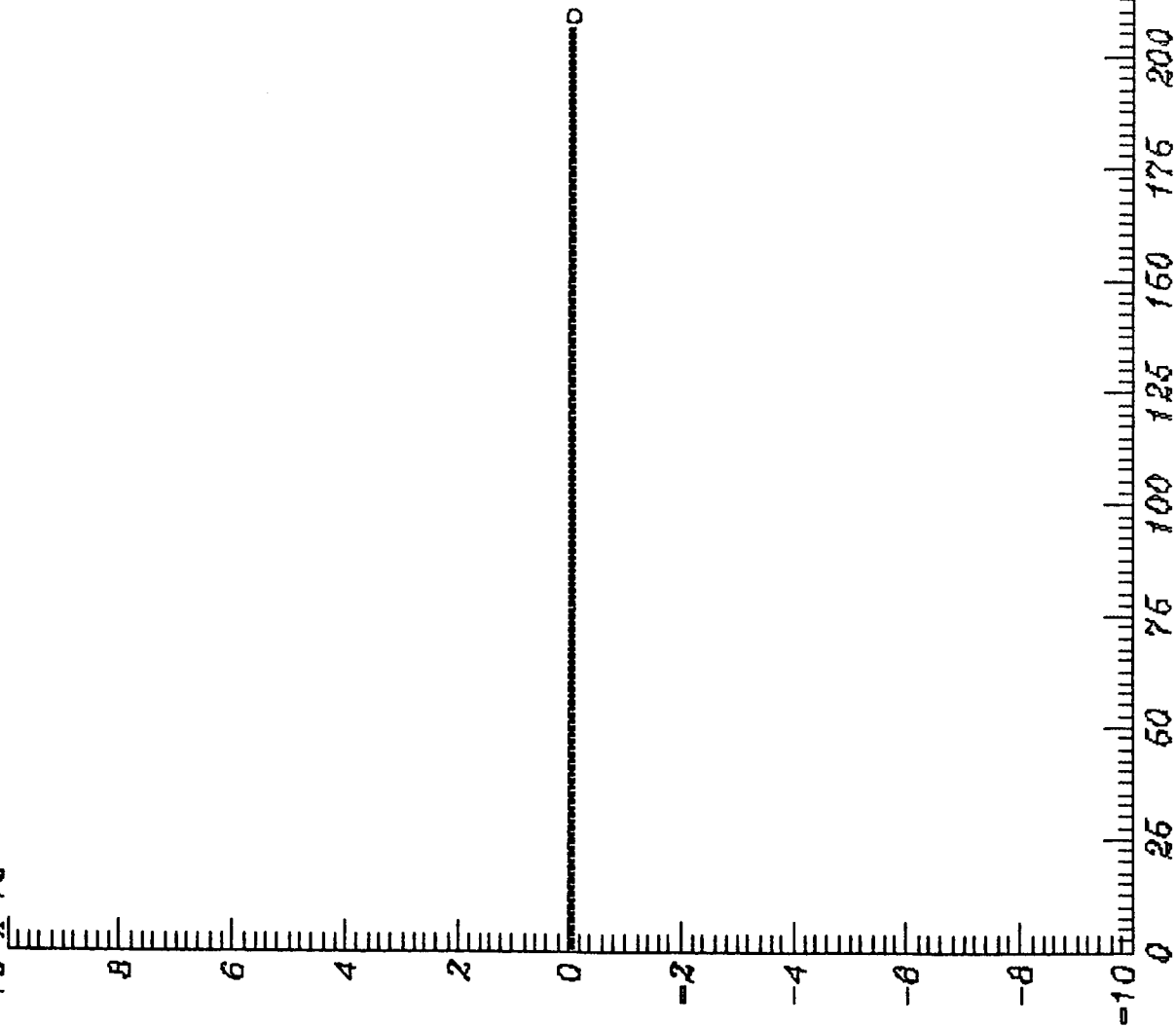
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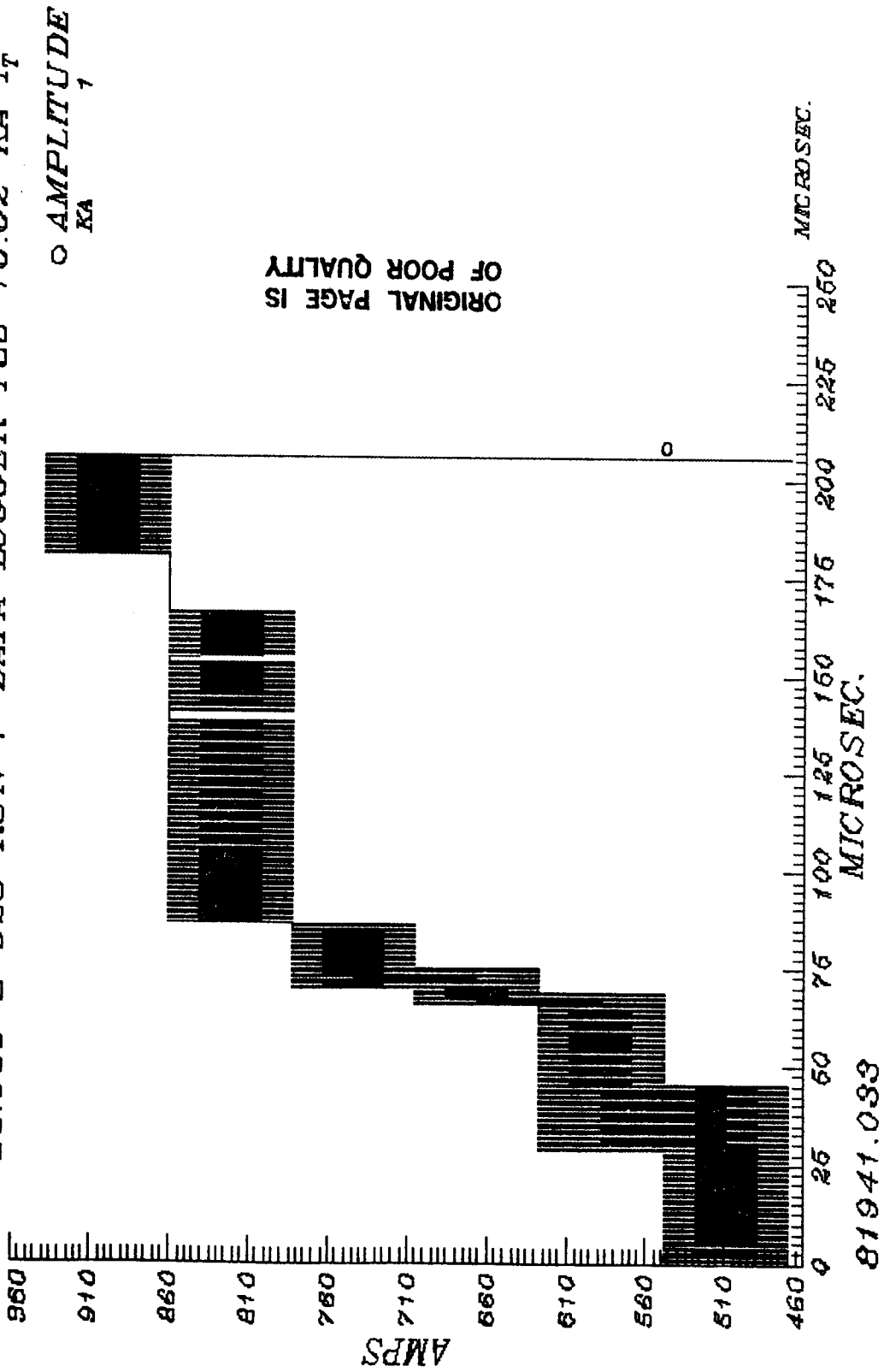
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AMPS



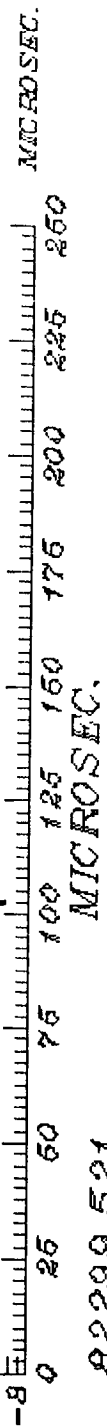
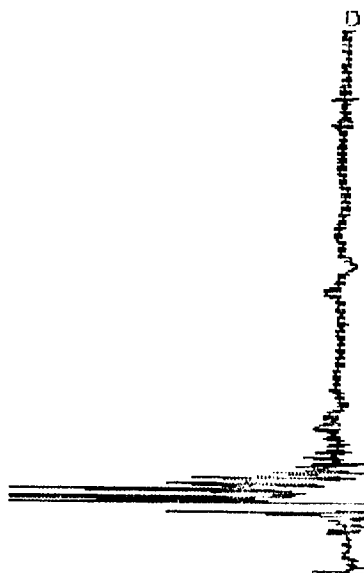
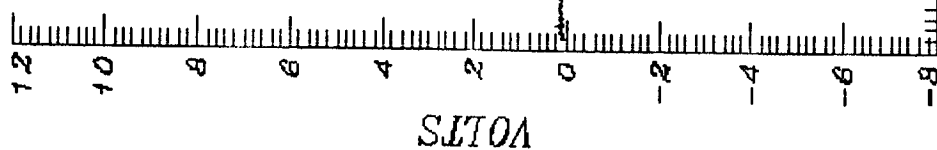
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83.050 S-023 RUN 7 DATA LOGGER T86 10.02 KA I_T



82.050 S-029 RUN X DATA LOGGER T87 7.5 V V_p

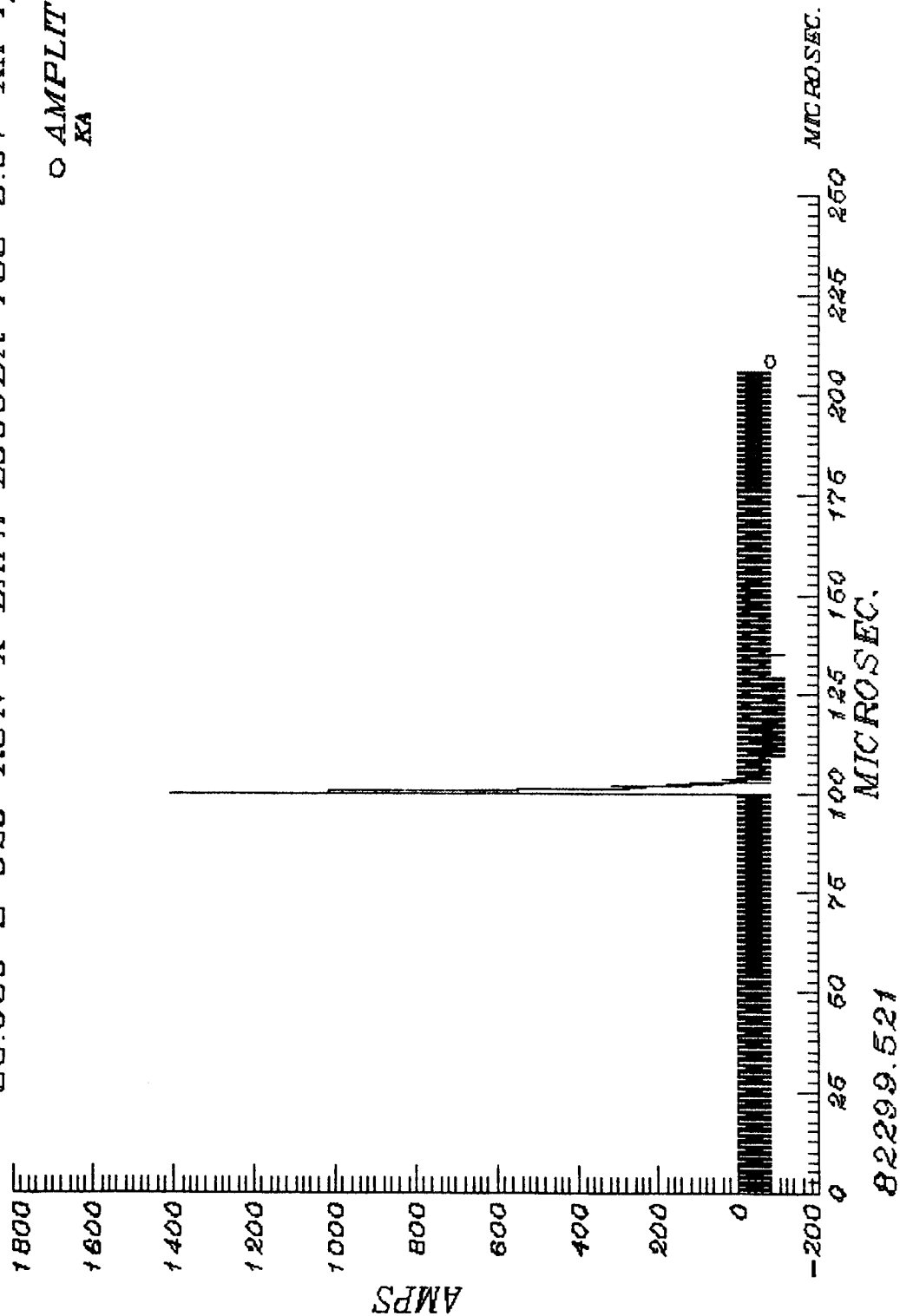
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VOLTS



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VOLTS

83.050 S-029 RUN X DATA LOCCEP T88 5.01 KA I_N
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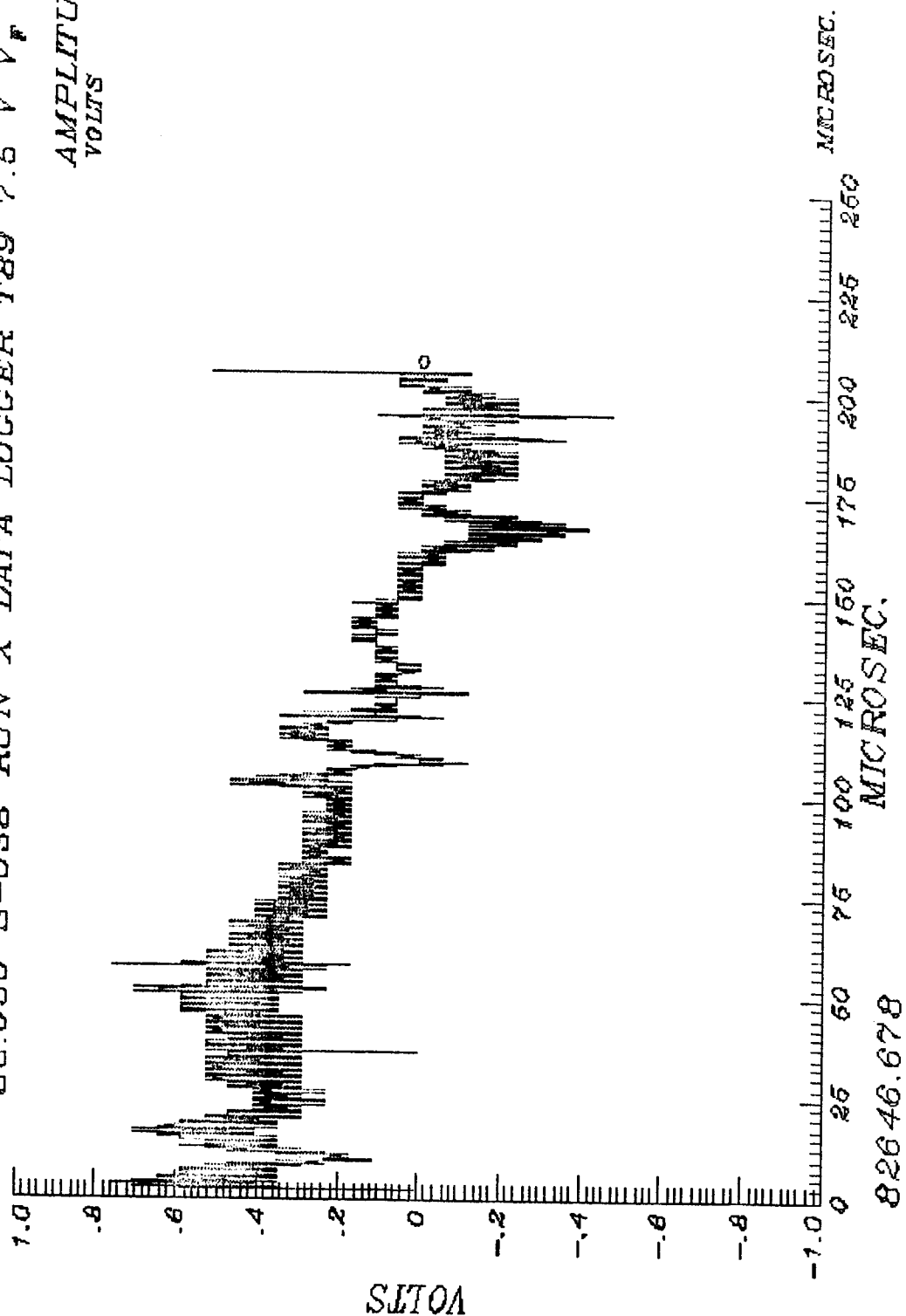


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82.050 S-038 RUN X DATA LOCCEP T89 7.5 V V_F

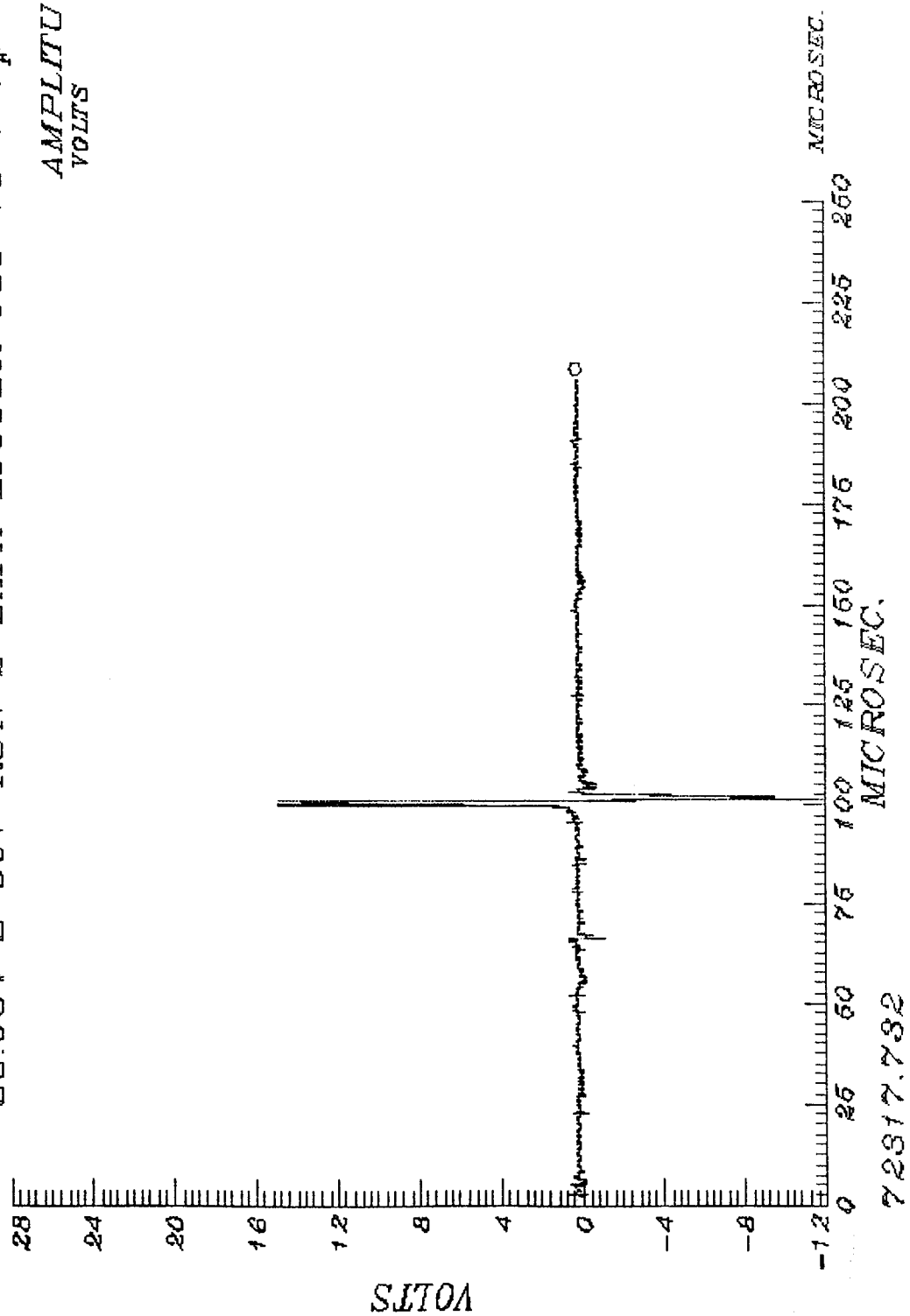
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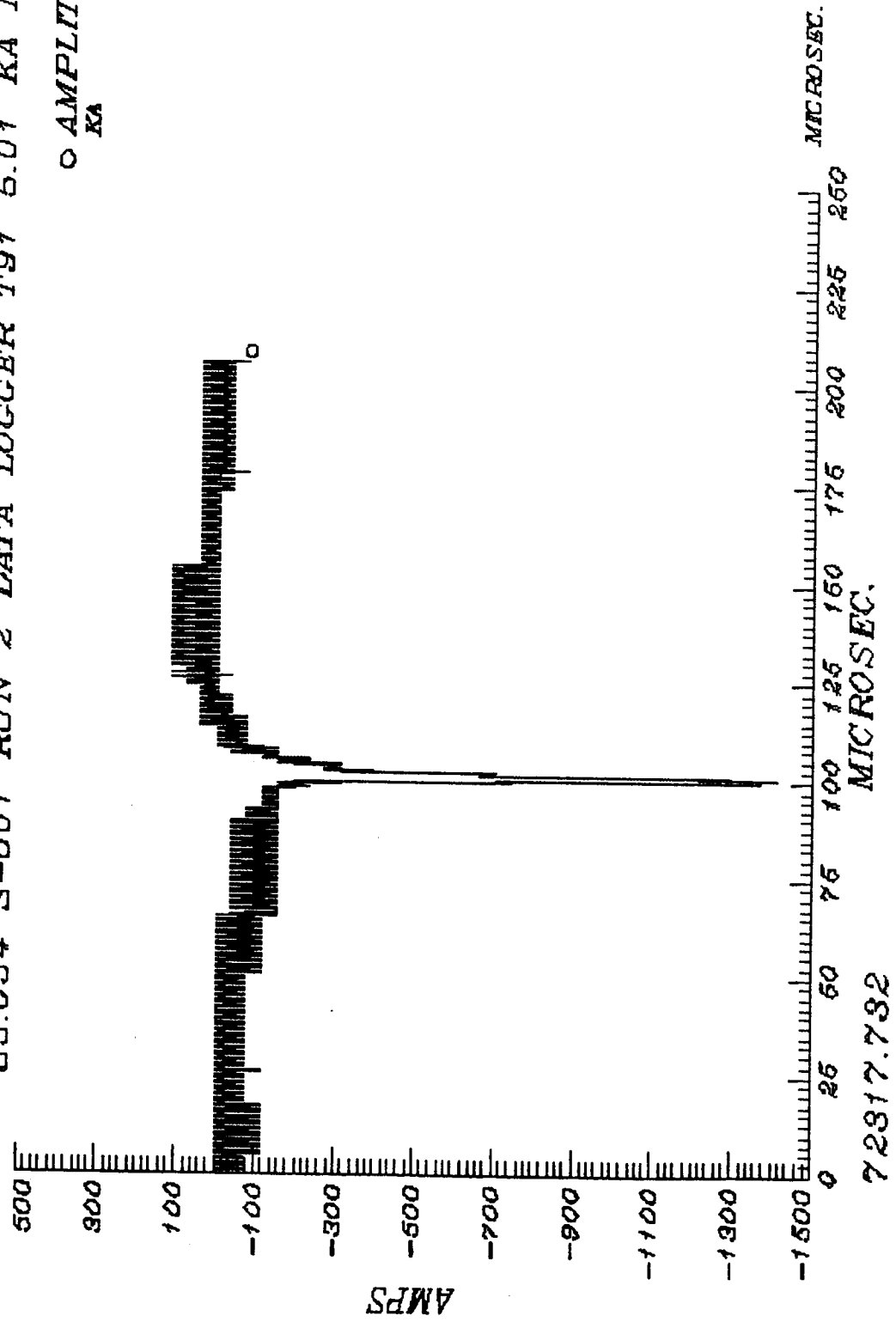
89.054 S-001 RUN 2 DATA LOGGER T90 15 V V_F

AMPLITUDE
VOLTS 1

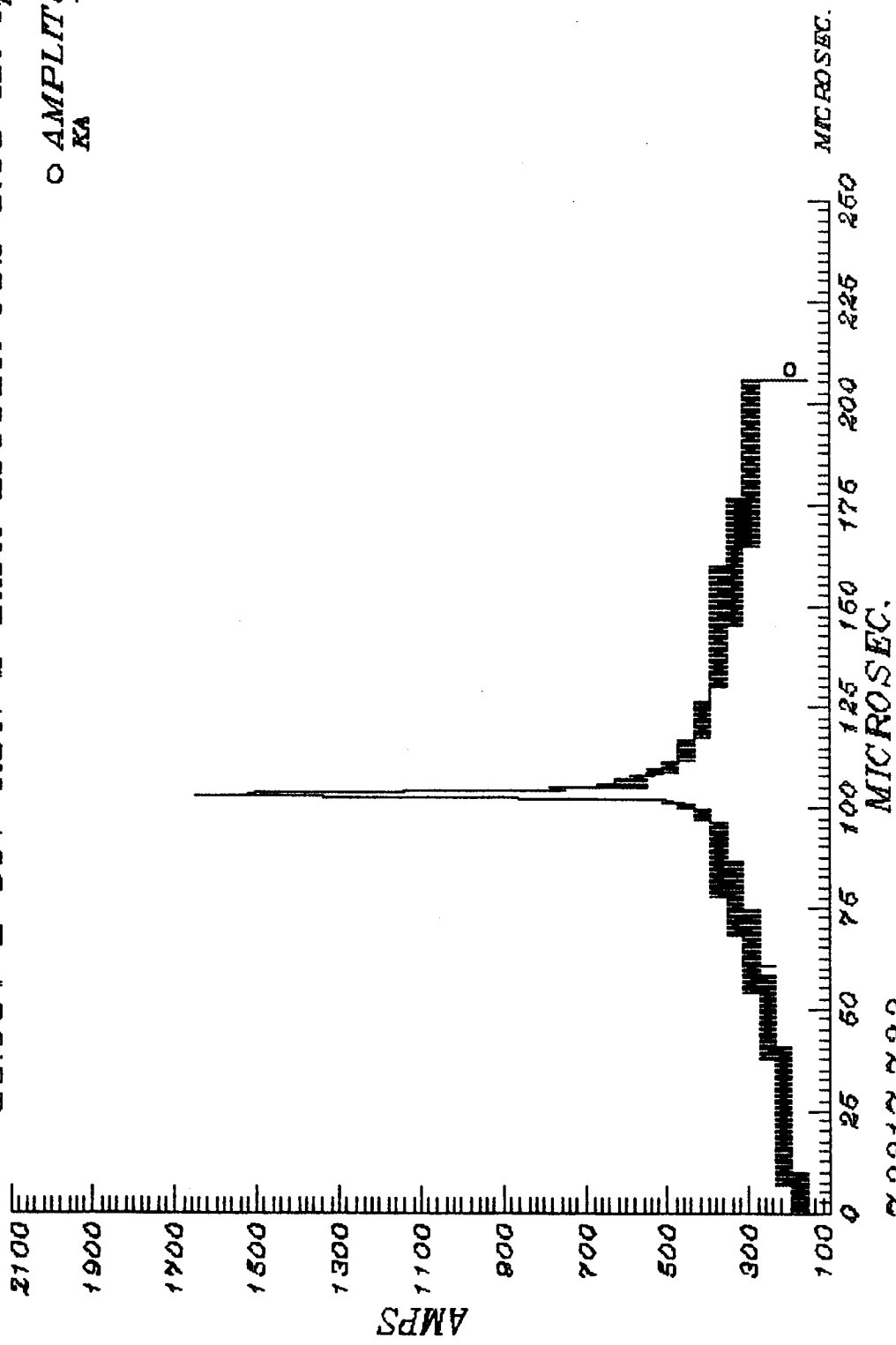


89.054 S-001 RUN 2 DATA LOGGER T91 5.01 KA I_N

○ AMPLITUDE
KA
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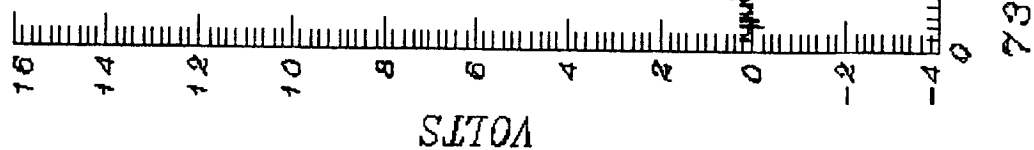
83.054 S-001 RUN 2 DATA LOGGER T92 5.03 KA I_T
O AMPLITUDE
KA 1



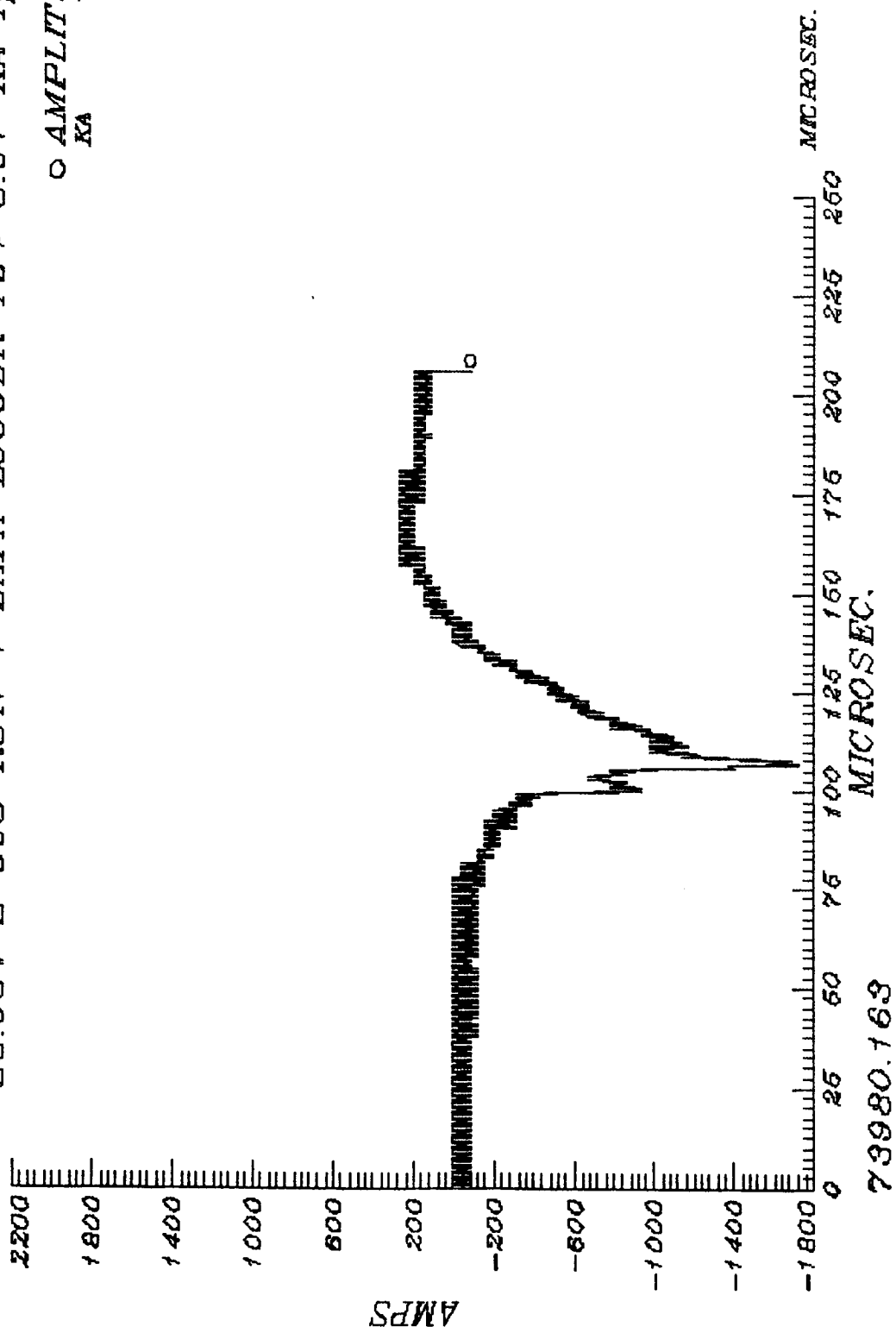
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83.054 S-003 RUN 4 DATA LOGGER T93 15 V V_F

AMPLITUDE
VOLTS
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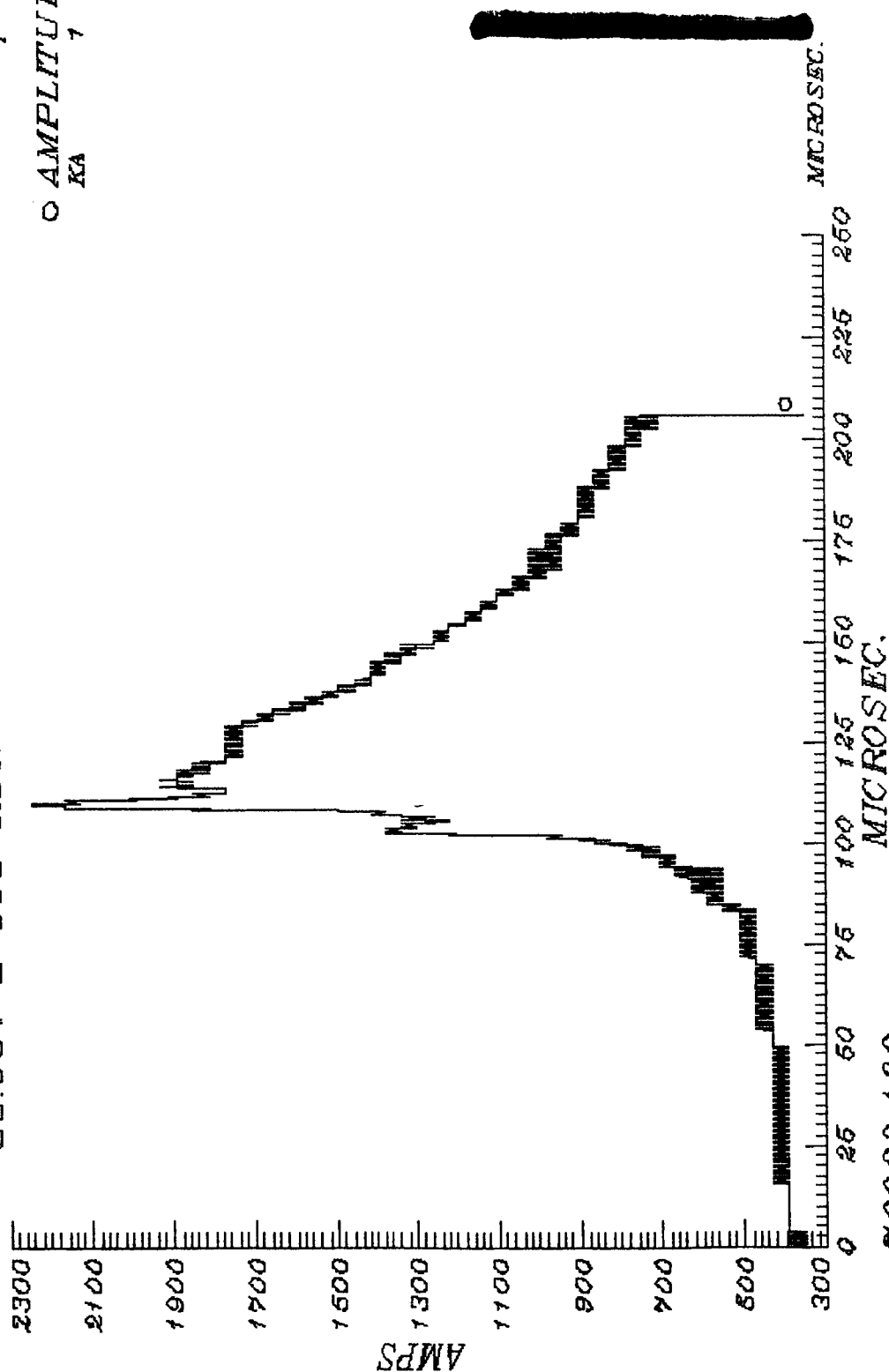


89.054 S-003 RUN 4 DATA LOCCER T94 5.01 KA I_N
O AMPLITUDE
KA 1



73980.163

83.054 S-003 RUN 4 DATA LOGGER T95 5.03 KA I_T
 O AMPLITUDE
 KA 1



73980.163

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